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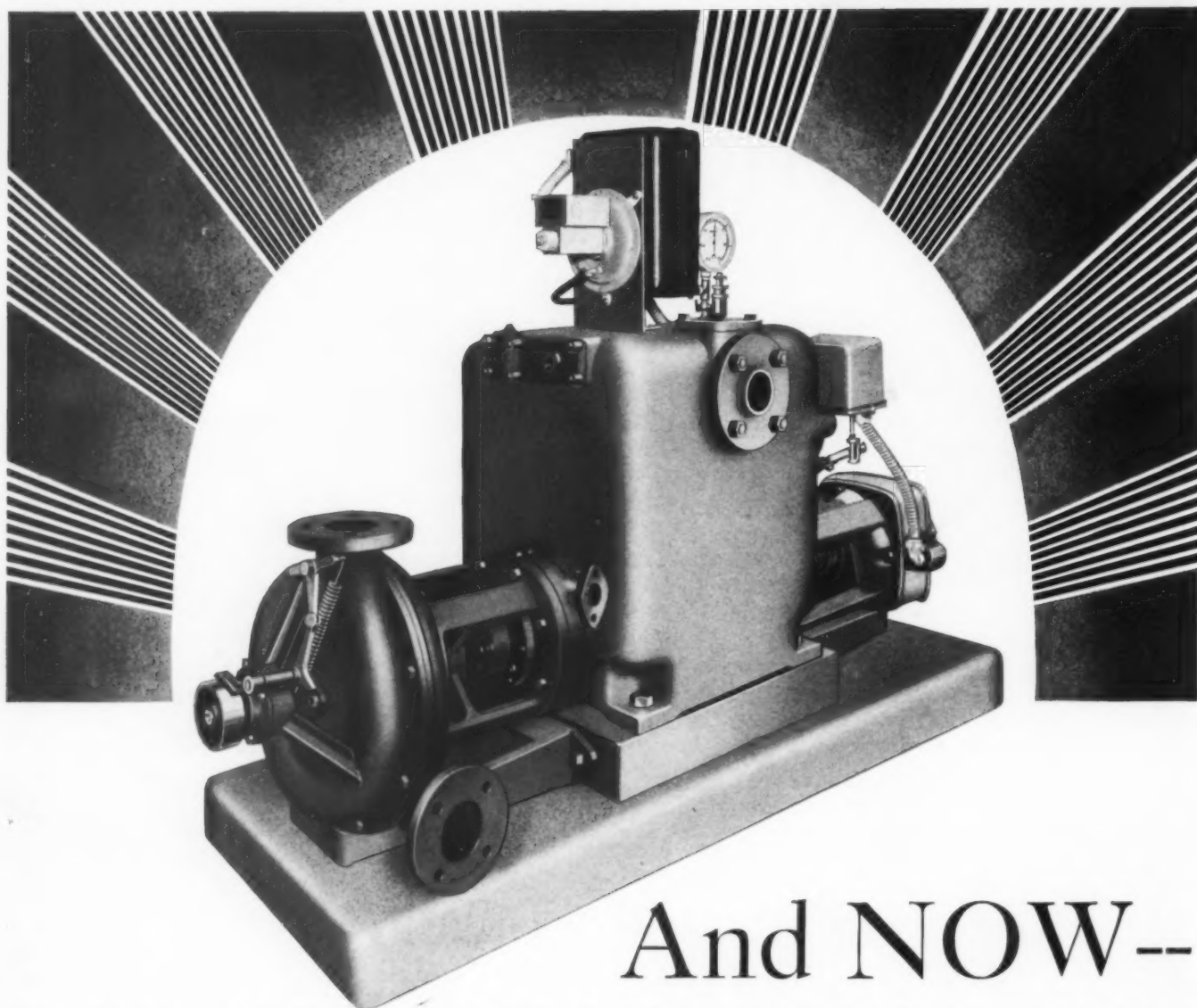
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THE BUILDING, EQUIPMENT AND ADMINISTRATION OF SCHOOLS

VOLUME XI

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NUMBER 1

## What Does the I. Q. Really Measure?

*There is an urgent need, in the author's opinion, for open-minded investigators who will study children and search for ways of helping each child make the most of his potentialities, whatever his I. Q.*

By S. A. COURTIS, Professor of Education, University of Michigan

**T**WENTY years have passed since Stern's first suggestion that the quotient obtained by dividing a child's mental age by his chronological age, is a measure of the child's brightness. A child whose mental age and chronological age agree has, of course, a ratio of 1.00.

We tend to think of such relationships in percentages. When a ratio of 1.00 became an index of 100 (per cent), the intelligence quotient was born and today we might well be celebrating its twentieth birthday. The I. Q. is, of course, only a symbol for a mathematical computation, a fact many of its users frequently forget. Naturally, the significance of an I. Q. is dependent upon the significance of the elements from which it is derived. I propose to discuss here certain new explanations and criticisms, and to offer my contribution, to the end that administrators and teachers who use the I. Q. may do so more understandingly and more effectively than before.

Anyone who undertakes to consider intelligence testing needs to recognize that concepts of brightness, ability, stupidity, imbecility, intelligence and so on, antedate by many hundreds of years the attempt to measure such differences in individuals. It is a universally accepted fact that individuals differ, and it is important for present purposes to note how they differ.

For instance, one man is born blind. Eyes are totally missing from his make-up. He never sees

and there is no possibility of making him see. Another man, is born with eyes that function poorly. He can distinguish light from darkness, and detect gross movements in objects, but that is all. A third man sees form and movement as well as another man but is color blind. A fourth man, in most affairs of life, has only ordinary vision, but for years he has been at work in a nursery, sorting and selecting fruit tree seedlings, until his eyes can detect differences that others can scarcely detect when they are pointed out. Hours and hours of experience have trained his eyes to a keenness of vision in this field that seems incredible to those who have not had similar training. A fifth man has unusual powers of vision, without training; he can distinguish smaller differences than the average man, in form or movement, can make finer distinctions in light, shade and color, and so on.

Finally, there is the fact that all five of these men, at birth, were equally blind, and that in four of them sight gradually developed. There was a time in the life of all four when only gross form and movement could be distinguished. One man never developed beyond that stage. Probably there was also a time in the development of three of the men, when none of them could distinguish color. One of the three never developed beyond that stage.

These five aspects of ability, so easy to recognize in the case of sight, exist in every field of ability

and are universally recognized, today as in the past. Let us generalize these aspects as follows: Type A—absence of functioning, because of deficiency in structure; Type B—deficiency in function, because of defective structure, organization or development; Type C—peculiarity of functioning; Type D—skill in functioning, developed by training and experience; Type E—normal levels

TABLE I—AGE vs. INTELLIGENCE IN PREDICTION OF SUCCESS IN HIGH SCHOOL

High School	Correlations			
	Age and Scholarship	Intelligence and Scholarship	Age and Intelligence	Multiple Age—Intelligence and Scholarship
A	-.37	.38	-.52	.43
B	-.48	.36	-.56	.49
C	-.36	.28	-.43	.38
D	-.35	.41	-.49	.45
E	-.42	.40	-.58	.46
F	-.40	.36	-.53	.44
Mean	-.40	.36	-.52	.44

of development in functioning, or stages of natural growth.

Common observation recognizes and feels that it understands Types A and E. Accordingly, its explanations of Types B, C and D are readily compounded from the explanations of the two extreme types.

In the mental field, we cannot see the "organs" of intelligence as we can see the organs of sight. Granted that the brain is the central organ of control in mental activity, it is natural to assume that defective thinking or behavior is caused by either defective development or deficiency in mechanism. However, in the mental and educational fields, defective development, so the reasoning goes, may easily be overcome by training. Give a child a reasonable amount of training in spelling and if he doesn't learn to spell, he hasn't normal "brains."

The I. Q. has been seized upon by many as a measure of mental deficiency. An I. Q. of 70 means, they say, that the child is only 70 per cent normal and never can be taught to spell. I. Q. thus comes to be considered an index of capacity. To expect a child with a low I. Q. to learn under teaching or to succeed in life, is like expecting instruction to supply eyes to the man born blind. Mental deficiency is regarded as always a Type A situation. Hedge this doctrine with a superficial knowledge of heredity, chromosomes and genes, a few pertinent quotations from Galton, Thorndike and Terman, a few experiences in trying to teach children who do not learn in spite of the best efforts that are made to help them, and the situation is ripe for the genesis of a deterministic conviction

of such strength that mere facts are powerless to shake the self-assurance of the individual who holds it.

It would be foolish to deny that deficiencies in mental structure do exist; but such children do not learn at all. It would be equally foolish to deny that there are differences in the rates at which children learn; the facts in the case are well established and may be readily verified. All of us, experts and laymen alike, need to exercise great caution in reaching convictions about the causes of mental excellence or deficiency, and we should be alert to note evidence that casts doubt upon any inferences we may make. In twenty years the fatalistic theories of the determinists in education have become so firmly established in authoritative educational literature that the profession is rapidly developing an inferiority complex with respect to its ability to help children who have low I. Q.'s. This complex frequently operates to inhibit clear thinking and to make progress impossible.

When knowledge of intelligence tests first became general, and to use them became the fashion, many a school man fully believed that all instructional problems were solved. The program for reaching an educational Utopia read something like this: (1) Give children a general intelligence test and compute their I. Q.'s; (2) group them into classes on the basis of capacity and ability; (3) set goals in terms of their different capacities and abilities; (4) use methods of teaching adjusted to their known capacities and abilities; (5) then

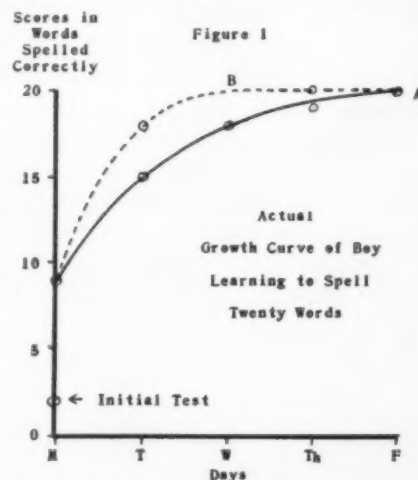


Fig. 1. Curve A represents a boy's progress in studying spelling under constant conditions. Curve B shows his progress when offered a dollar for each word mastered.

each child will attain just the measure of success to which his hereditary endowments entitle him.

It is foolish to deny that such a program represents a great step in advance of the unintelligent treatment of children in large masses on the assumption that all children are just alike. The contribution of the testing movement has been that teachers have been led to study children and to adjust methods and work to observed differences in individuals. It has also proved the specific bene-

fits from the use of tests to have been disappointingly small. As bases for exact scientific prediction and control, they are almost as imperfect as unaided subjective opinion.

For instance, "Two general intelligence tests, if given to a class of fifty to one hundred pupils, usually give scores which correlate with one another from .70 to .80."<sup>1</sup> "In general, the correla-

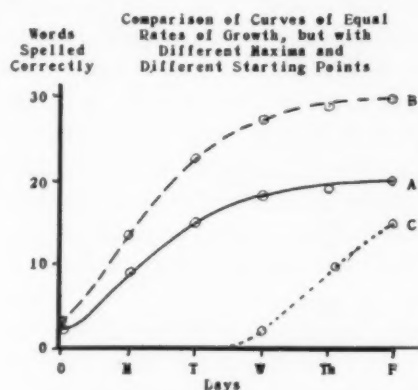


Fig. 2. The three curves represent a comparison of equal rates of growth, but with different maxima and different starting points.

tion of intelligence tests with composite school achievement in the elementary school is in the neighborhood of .50."<sup>1</sup> The correlation between the Thorndike college entrance intelligence examination and two-year scholarship scores in a certain institution was .594.<sup>2</sup> From one end of the school system to the other predictions of academic achievement based on intelligence tests have been disappointingly poor.

Perhaps the clearest interpretation of what such coefficients of correlation mean has been given by an investigator who has compared the efficiency of intelligence tests in predicting success in high school with the use of age for the same purpose.<sup>3</sup> More than 5,000 high school pupils in six high schools in four cities were given intelligence tests, and both age and score were correlated with the success of the pupils as shown by their school marks. (Table I)

The results showed that in a group intelligence test, on the average, age alone is a slightly better index from which to predict success in high school than score. It is no wonder, therefore, that all, except those who will not see, have rejected concepts and theories which claim too much for I. Q.'s as bases for interpreting or predicting human behavior.

And yet there certainly is something of value in I. Q.'s and tests and in the whole movement which seeks to isolate causes, to understand the reasons for human behavior and why it varies. It is as foolish to refuse such aids to understanding as it is to swallow uncritically the plausible self-deceptions of misguided enthusiasts.

Not many years ago I had the good fortune to hit upon an approach to the analysis of behavior

which has been fruitful in throwing light upon these problems.<sup>4</sup> The essential element in that approach is the recognition that in all situations involving behavior two types of change are possible: (1) developmental changes which take place when constant forces act under constant conditions; (2) changes which, outwardly, look just like the others but are really caused by forces that modify the situation. The first type of change will be called growth. This concept of growth as the effect of nurture on nature is deterministic in character and is measured by the rate of growth. The second type of change is produced by forces that create new situations. They are measured by change in rate of growth. They will be called creative forces to emphasize the fact of change in situation. An illustration or two will make these distinctions clear.

Suppose a boy is going to school every day and studying spelling under constant conditions. Suppose, as in the case to be cited, the method of teaching involves merely the use, for a specified time, of a study sheet of practice material on twenty selected words, and that at the end of the study each day a test is given to see how many words the child has learned to spell correctly. Suppose, finally, that every condition remains constant; the

TABLE II—COMPARISON OF INDIVIDUAL AND GROUP RATES OF CUTTING TEETH

Age of Girl in Months	Number Teeth Cut	Average Age for Teeth	Dental Ratio
91	6	79.4	87.5
101	10	89.5	88.5
113	11	93.5	82.5
125	14	115.0	92.0
149	18	122.0	82.0
161	25	138.0	87.0
173	28	158.0	91.0
185	28	-----	-----

Dental Ratio in

Order of Size: 82, 82.5, 87, 87, 88.5, 91 and 92  
Mid-Ratio 87, A.D. =  $\pm 2.9$

boy eats, plays and sleeps approximately the same amount each day and otherwise remains in a constant physical state, healthwise, and in a constant mental state so far as his attitude toward the effort to be expended on spelling is concerned. Such a child gradually learns to spell the twenty words. His scores day by day constitute a learning curve and we are dealing with a Type E situation pure and simple, one in which mental deficiency plays no part.

In a certain experiment a particular boy knew two of twenty words on Monday before he began to study. His score after study was 9 words, that is, he learned 7 words the first day. His scores on



the remaining days of the week were 15, 18, 19 and 20 words, respectively, so that his five gains were 7, 6, 3, 1 and 1 words (Curve A, Fig. 1).

The proper mathematical analysis of this and all similar growth curves in all the various biologic fields proves that an entire curve may be precisely represented by Equation 1,

$$y = k i^r \quad (1)$$

in which "y" is the degree of development at time "t," "k" is the maximum at maturity, "i" is the degree of development at the start, "r" is a constant rate of development. Specifically, if those who are mathematically inclined will substitute the values 0, 1, 2, 3, 4, 5, one after the other, for "t" in Equation 2,

$$y = 20 (.109^{.3632^t}) \quad (2)$$

(in which the value of "k" is 20 words, the value of the initial development is .109, the value of the rate is .3632), each time solving for "y," they will obtain the results 2.2, 9.0, 15.0, 18.0, 19.2, 19.7 as scores. These are as close to the actual scores given above as the limitations of the measuring instruments used permit. This means that, under con-

ditions, growth in spelling goes forward in a way which is as precisely predictable as the most radical determinists could desire. So much study, so much learning. In other words, when expressed in the proper units, and after the results have been stripped of the effects of both the initial development and the maximum at maturity, there is almost a perfect correlation between units of study and increase in achievement, in spite of the fact that in terms of gross scores no such relationship is apparent.

$$y = 20 (.109^{.1319^t}) \quad (3)$$

in which the logarithm of .1319 is twice the size of the logarithm of .3632. The scores computed by this equation turn out to be 2, 9, 18, and 19.7. The boy would be learning twice as fast because it takes him only two days to finish instead of four (Curve B, Fig. 1). The money has operated as a force creating a new situation in which learning was just as deterministic as before, but went forward at a higher rate.<sup>5</sup>

It should be clear, therefore, that in dealing with human performance we are dealing with complex phenomena, and that no offhand interpretations will adequately represent the truth. My conclusion is that no single test that measures merely performance, as all tests do, can possibly represent "intelligence," reading ability, aptitude or any other such concept. There must be analytical treatment of scores before such interpretations can be made.

From Equation 1 it will be seen that the factors that determine growth curves are three in number: (1) the maximum toward which growth progresses; (2) the initial development from which it starts; (3) the rate at which it proceeds.

It is important that everyone who interprets tests should understand what these fundamental factors are and what effects they produce. Each merits a brief discussion.

The first factor, maximum, corresponds somewhat to current conceptions of capacity. If a man inherits the capacity to become six feet tall while someone else is just like him except that his capacity is limited to a height of four feet, anyone observing them as children would say that one child was growing faster than the other, when really the factor, rate of growth, would have identically the same value in the formulas for the growth of these two children.

For example, let us create a similar situation in spelling. Compare Curves A and B in Fig. 2. The first is based on the scores our boy actually made when he was growing according to Equation 2,

$$y = 20 (.109^{.3632^t}) \quad (2)$$

which gave the scores, 2.2, 9.0, 14.96, 18.0, 19.2, 19.7. The second, or broken line curve, represents the way the boy would have grown, if the rate of growth in the formula for the curve had remained the same as for Curve A and the maximum had

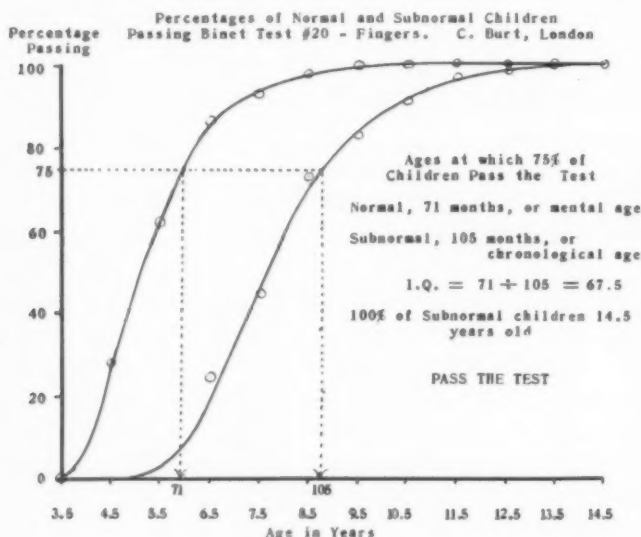


Fig. 3.

stant conditions, growth in spelling goes forward in a way which is as precisely predictable as the most radical determinists could desire. So much study, so much learning. In other words, when expressed in the proper units, and after the results have been stripped of the effects of both the initial development and the maximum at maturity, there is almost a perfect correlation between units of study and increase in achievement, in spite of the fact that in terms of gross scores no such relationship is apparent.

It is hard for many persons to credit such data. We seldom experience such perfect curves. Therefore, let us suppose conditions had not remained constant. Imagine that the boy's father was so

changed from twenty to thirty words of the same degree of difficulty. The equation would be

$$y = 30 (.109^{.3632^x}) \quad (4)$$

which yields the scores 3.3, 13.5, 22.5, 27.0, 28.9, 29.7, represented by Curve B. Boy B appears to be growing more rapidly than Boy A but the difference between the two curves is caused solely by the difference in maxima. This comparison suggests that it is always necessary to interpret the scores of individuals in terms of their own maxima, whether one is dealing with intelligence tests, achievement tests or tests of any other kind.

The other new factor to be considered is the degree of development at the beginning of the growth cycle. I have suggested the term "incipiency" as a name for this factor.

For instance, our boy was already 10 per cent developed when the experiment began. Suppose we rewrite Equation 2, and make the incipiency very, very much smaller, thus:

$$y = 20 (.000,000,000,000,000,012,03^{.3632^x})$$

Such a child would have made a zero score on Monday before study, and a zero score after study. On Tuesday, also, his score after study would still have been zero in spite of two days of study. His study on Wednesday would at last bring results (Curve C, Fig. 2). On Wednesday he would spell 2.2 words correctly, the score our first boy made on the first test. His scores on Thursday and Friday would duplicate those of the actual boy on Monday, Tuesday and Wednesday. As you compare the two curves in the figure, ask yourself if you could have guessed, without analysis, that both boys were growing at exactly the same rate. Ultimately both boys would learn to spell the total number of words perfectly. The two boys were equally bright. Incipiency must also be known before correct interpretations of scores can be made. If, now, we ask ourselves, "What does the I. Q. really measure?" we are somewhat prepared

to give the proper answer, "It depends upon the situation." Even if maximum and starting point are ignored, the I. Q. seems to measure merely relative rate of development.

For instance, Binet, in speaking of his scale, said, "Here we limit ourselves to the evaluation and quantitative determination of their intelli-

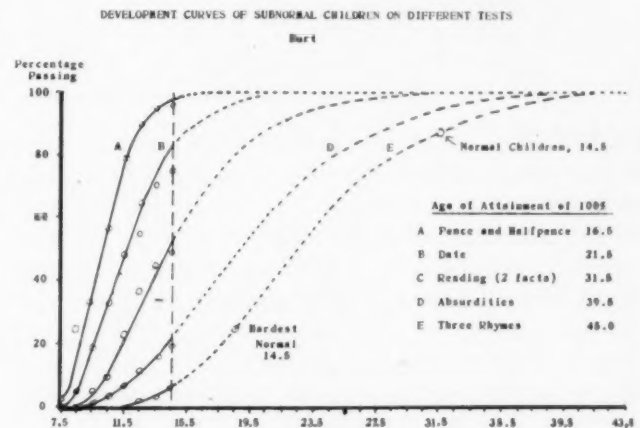


Fig. 4.

gence in general: we shall determine their intellectual level; and to give an idea of this level we shall compare it with that of normal children of the same age, or of an analogous level." In other words, Binet recognized that there are different levels of development in growth, and constructed his scale as an instrument for determining what level a given child had attained at a given time. It serves this purpose admirably. Difficulty arises only when a person goes beyond the facts and makes an attempt to interpret what is signified by the facts.

Consider, for instance, the relative ability of normal and subnormal children in the London schools<sup>7</sup> to pass the Binet test (No. 20, Fingers) which asks of children, "How many fingers have you on your right hand? How many on your left hand? How many on both hands? (Fig. 3). It is

TABLE III—I.Q.'S OF CASE M-300 ON REPEATED TESTS

Tests Used	Age in Months										Mean
	91	93	101	113	125	149	161	164	173	185	
Dearborn General Examination A .....	93		92	93							93
Dearborn General Examination C .....					86	94	94				91
Otis Primary A .....					104	102					103
Otis Self-Administering Test B .....						78					78
Terman Group Test A...									100		100
Terman Group Test B...										89	89
Haggerty Delta 2 .....							104	98	88		97
Binet-Individual .....		94						101			97
Mean Value .....	93	94	92	93	90	91	99	100	94	89	94

I.Q. Arranged in Order of Size: 78, 86, 88, 89, 92, 93, 93, 94, 94, 94, 98, 100, 101, 102, 104, 104.

Mid-Value 94 A.D.  $\pm 5.2$

TABLE IV—COMPARISON OF D. R.'S FROM TEETH AND FROM INTELLIGENCE TESTS

Boy A			Boy B		
Range of D. R.'s			Range of D. R.'s		
Teeth 90-151			Teeth 94-111		
Tests 102-143			Tests 77-123		
Mid-Value		Av. Deviation	Mid-Value		Av. Deviation
Teeth 103.5		$\pm 7.6$	Teeth 98		$\pm 2.8$
Tests 122.0		$\pm 5.0$	Tests 106		$\pm 4.3$
No. of Measurements			No. of Measurements		
Teeth 7			Teeth 6		
Tests 16			Tests 21		

evident that the subnormal children mature more slowly than normal children. The Binet I.Q. of the subnormal group was found to be 65, and the ratio of the times required by the two groups to reach equal development in this one test is approximately 65. The subnormal children mature at 65 per cent of the rate of the normal children. The I.Q., or mental age divided by chronological age, merely expresses the relation between the times required to reach a given development in this one test. It does not, in any way, indicate that the subnormal children will never learn how many fingers they have on both hands. As an actual fact, Burt's data show that every subnormal child in the fourteen year old group answered these questions, and the questions in twenty-four other Binet tests perfectly in spite of an average I.Q. of 57.

Many persons are momentarily shocked by these facts but quickly recover their former convictions by saying, "That may be true for the simpler tests but it is not true of the higher levels of development." The facts, however, show differently.

Of course when difficult tests are given to sub-

Fig. 4) and to determine when the 100 per cent level of development would be reached. For instance in the test "Three Rhymes," the subnormal children, if exposed to the same training through the whole period would reach 100 per cent at forty-five years. On the hardest test in the Binet series even normal children reach only 25 per cent of perfection at fourteen years of age. Taken together, therefore, these data lend no support to the idea that the I.Q. indicates any limitation in capacity. These data do, however, express relative rates of growth.

Sometimes new conceptions are easier to comprehend if sensed in a different field. A comparison of the development of the ability of hens to lay eggs as measured by the days after hatching at the laying of the first egg provides much food for thought<sup>s</sup> (Fig. 5). If, following the mental test technique, we adopt as normal the age at which 75 per cent of white leghorn chickens lay their first eggs namely, 197 days after hatching, then Rhode Island reds must be judged subnormal, since they do not attain this same level of development until 253 days after hatching. The 197 days is the same as mental age and the 253 days is the same as chronological age of the Rhode Island reds. The ratio or I.Q. is 78. As an expression of intelligence or capacity the result has no meaning, but as a measure of the relative rate of development of the egg laying function, 78 per cent has real significance.

In passing, it may not be out of place to raise the question of the suitability of an egg laying stunt as a test for roosters. They would, of course, make a zero score because the test would be a Type A situation for them. It is equally foolish to attempt to measure children with tests unsuited to their natures and experiences.

The value of the I.Q. both as a measure of rate of development and as a tool for the study of children is clearly illustrated by growth data from a different field. Through the kindness of Dr. Psyche Cattell, I have in my possession the records of a number of children measured repeatedly over an eight-year period. Case No. M-300 is a girl born June 27, 1915. Her parents are Scotch and her

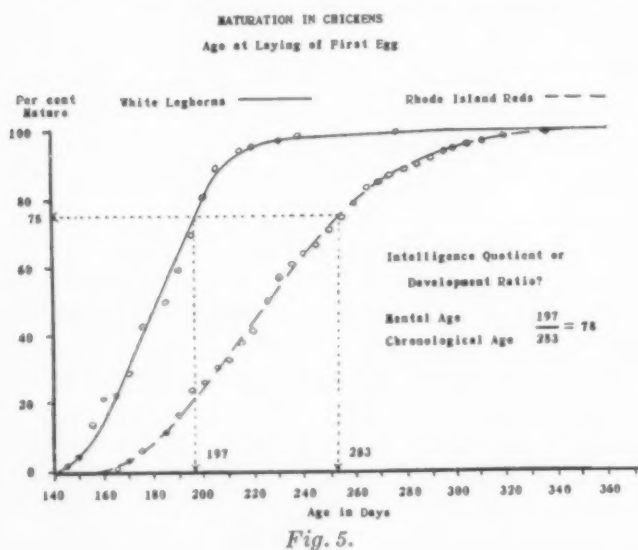


Fig. 5.

normal children their percentages of success are small but even normal children do not reach 100 per cent on the difficult tests by fourteen years of age. Knowledge of the laws of growth enables us to project these curves forward (dotted lines,



father is a meat cutter. The girl has permanent teeth cut as shown in Table II.

The growth curve for the cutting of permanent teeth in girls, based on measurements of 6,766 girls, ages 6 to 18 years, in five cities in Europe is expressed by the isochronic equation,

$y = 14 (.8875 t - 38.81) + 14 (1.09 t - 104.37)$   
Average deviation, (computed minus actual values)  $\pm 0.15$  teeth.

From this equation it is possible to compute the age at which girls in general cut any given number of teeth. These ages will be called "dental ages" and are analogous to "mental ages." If we divide the dental age at each observation by the related chronological ages we get a series of dental quotients exactly analogous to I.Q.'s except, of course, that they have nothing to do with intelligence. I prefer the term "developmental ratio" (D.R.) for both dental ratio and mental ratio.

The mid D.R. in this case was 87 with an average deviation of  $\pm 2.9$ . That is, one can be fairly certain the girl is cutting her teeth at from 84 per cent to 90 per cent of the rate at which the average girl cuts her teeth. There are, of course, chances for error in the observations. Six teeth means anything from 6.0 teeth up to, but not including 7.0 teeth, and an error of half a tooth would make a difference, on the average, of 3.5 months. But even as the results stand the variation is low as such measurements go. The girl has cut her teeth at a

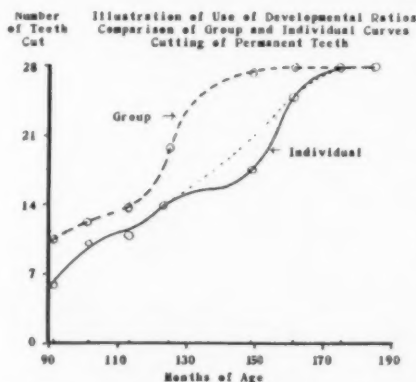


Fig. 6. This graph compares the girl's and the group curve in cutting teeth. The light dotted line shows how a normal child would have grown.

fairly constant rate. The question is, "Do such variations as exist have any meaning?"

Unfortunately, at this point, essential information is lacking. A comparative graph (Fig. 6) of the girl's and the group curve reveals at once that something happened between age 125 months and age 161 months. The light dotted line shows how a normal child would have grown. Whether the girl was sick during the period of puberty so that adolescent growth was slowed down, or whether the examiner made a mistake in his observations, is not known, but the data are consistent in indicating some disturbance, and this is the function of I.Q.'s, D.R.'s and all other sorts of indexes. They are not fixed absolutes, but vary as conditions vary.

Therefore, when they vary, they are traffic signals to teachers, parents and all interested in the care of children, warning them to make a search and diagnose the trouble. When conditions are constant the individual's growth can be computed from the average curve by using (age x D.R.)

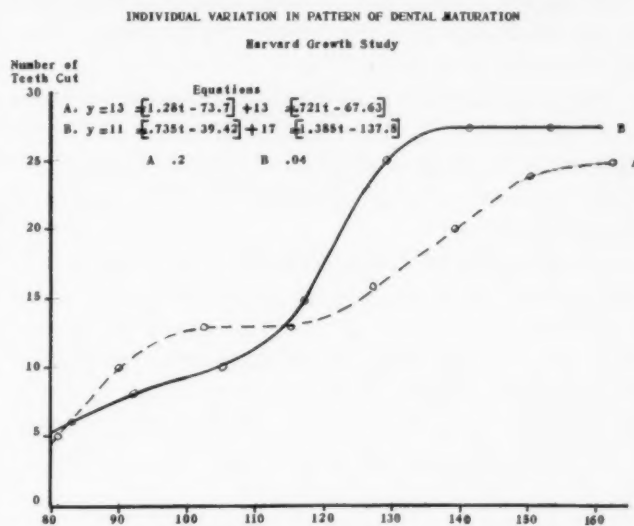


Fig. 7.

instead of "t." For instance, the equation for this individual's growth curve is

$$y = 14 (.8875 t^{(.87)} - 38.81) + 14 (1.09 t^{(.87)} - 104.37)$$

The average error of prediction by this curve, except for age 149 months, is .6 of a tooth, almost exactly the error of observation, namely, half a tooth.

A question which is likely to occur to many is, "What is the relation of D.R.'s to I.Q.'s?" In this case the same individual was tested repeatedly with the results indicated in Table III.

A comparison of the data in Tables II and III shows that the I.Q.'s from various intelligence tests differ more among themselves than the D.R.'s do. The two determinations of D.R.'s and I.Q.'s overlap, that is, the central range of D.R.'s is from 84 to 90 and of I.Q.'s from 89 to 99. The two indexes might well measure identically the same factor, rate of growth.

It may seem surprising to many that one can determine a child's I.Q. from his teeth, but for two-thirds of the children the result will agree with the I.Q. from an intelligence test, as closely as I.Q.'s from different intelligence tests agree. Makers of tests have not standardized their tests in the same way. The cutting of permanent teeth would offer an excellent standard against which to check tests were it not for the fact that for about one-third of the children differences in starting points and in maxima spoil the correlations.

The teeth growth curves for two individual boys from the Harvard Growth Study are shown in Fig. 7. During preadolescent growth, Boy A grows

at a rate of 1.28 isochrons towards a maximum of thirteen teeth, while Boy B grows at a slower rate of .735 isochrons towards a maximum of eleven teeth. During adolescent growth, however, it is Boy A who grows slowly (rate .721) and Boy B who grows rapidly (rate 1.385). Note also that while Boy A's maxima are thirteen for both cycles of growth, Boy B's one maximum is eleven and the other is seventeen.

With children who vary thus from conventional or average growth, how do the D. R.'s from both teeth and intelligence tests compare? The actual data for these erratic children were as shown in Table IV.

In both cases in Table IV the I. Q.'s from intelligence tests show a range of over forty points, and the chances are two to one that a new measurement would vary from the mid-value by from four to five points. Such results emphasize the need for individual curves based on repeated measurements year after year, if we are to draw correct infer-

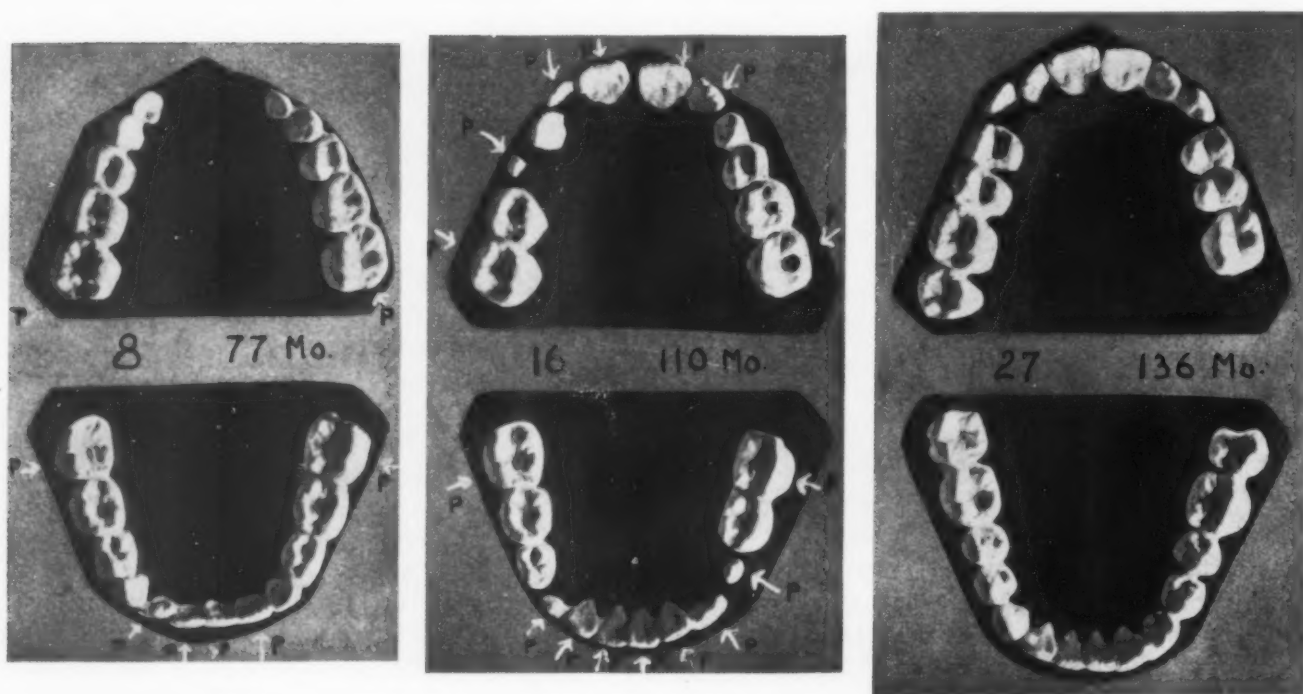
ences about children. Our conventional interpretations of scores in intelligence tests are too grossly imperfect to serve as anything more than general symptoms of the rate at which growth takes place.

The question, "Is the I. Q. constant?" has been the subject of much controversy. Some writers have claimed the I. Q. steadily increases as a child grows older; others are equally sure that the I. Q. steadily falls; still others believe the I. Q. remains constant throughout life. The facts are that in any sizable group of children illustrations of all three patterns may be found.

For instance, in Fig. 8 are shown three photographs of plaster casts of a girl's mouth taken by a dentist in studying the process of dentition. At 77 months the girl had cut eight teeth, at 110 months, sixteen teeth, and at 136 months, twenty-seven teeth. The norms for the cutting of permanent teeth in girls used in a certain investigation were eight teeth at 88.4 months, sixteen at 124.8 months, twenty-seven at 152.5 months. In other

#### MEASUREMENT OF RATE OF DENTAL MATURATION

##### Photographs of Teeth of the Same Girl at Different Ages



##### Dental Ages

8 = 88.4 months  
16 = 124.8 months  
27 = 152.5 months

##### Dental Development Ratios

$\frac{88.4}{77} = 115$	$\frac{124.8}{110} = 113$	$\frac{152.5}{136} = 112$
$\frac{83.4}{77} = 108.3$	$\frac{119.8}{110} = 108.9$	$\frac{147.5}{136} = 108.4$

Fig. 8.

words, these are "dental ages" corresponding to the score of the girl in "teeth cut." The dental ratios from these scores (dental age divided by chronological age) were 115, 113 and 112. The apparent decrease with age is, however, wholly fictitious and is caused by the use of norms that do not fit this particular child's growth curve. For if we subtract five months from each dental age, making them 83.4, 119.8 and 147.5, respectively, the D. R.'s become 108.3, 108.9 and 108.4, ratios as constant as the precision of measurement permits.

The D. R.'s from intelligence tests which either increase or decrease consistently are caused similarly by individual incipencies which differ from that of the curve on which the norms are based. So long as conditions are constant and a child's growth is regular or normal, the D. R.'s will be constant.

The practical conclusions to be drawn by school men from the data that have been presented are:

1. The trouble with intelligence tests is more with the methods of interpretation than with the methods of construction.

2. Scores in both intelligence tests and in achievement tests are much more complex than has been supposed. Specifically, the interpretation put on any single score, even group averages, must include a knowledge of the effects of the maximum towards which growth progresses, and of the degree of development (incipiency) at the beginning.

3. The only safe basis for the interpretation of the scores of an individual is his own growth curve. An individual's score in a single test is meaningless for prediction; it merely gives a picture of his status at the time of the test.

#### *The Need of the Hour*

4. The analysis of growth curves shows that rate of growth is one of the basic factors involved. Where the effects of other factors are allowed for, the I. Q. is a measure of the relative rate of growth and is not in itself a measure of capacity. If a child can learn at all, he can learn to average achievement if training is continued long enough.

5. Some very bright children have low incipencies. In such cases they apparently do not respond to training as other children do and appear dumb both to observation and to tests.

6. A low I. Q. may be caused by: (a) actual deficiency in nerve or motor mechanism or organization or both; (b) the development of faulty habits of response; (c) a low incipency; (d) deficiencies in training or experience; (e) individual peculiarities in patterns of development.

Similar statements could be made for high I. Q.'s.

7. The I. Q. is a relative and not an absolute

measure of rate of growth. As our power to strip scores of the effects of other factors increases, the I. Q.'s or D. R.'s, as they are more properly called, derived from such divergent types of measurement as teeth, intelligence tests and height, tend to approach a single value for the individual. This suggests that an individual has a basic "tempo" of development which is one of the determining factors of his growth in every field.

8. The need of the hour is for open-minded investigators who will refuse to be limited by the hasty generalization of narrow specialists, and who will study children and optimistically search for ways of helping each child make the most of his potentialities, whatever his I. Q.

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## Radio Can Be Used Many Ways in Educational Work

In centers where schools have been making extensive use of radio broadcasting for a number of years, community leaders are enthusiastic about the success of the service, according to Cline M. Koon, senior specialist in education by radio, U. S. Office of Education.

Radio can be used as an open forum for the discussion of public questions of major importance. It can be used as a classroom instructional device, or as an outlet for superior work done by pupils.

Citizens of a community are entitled to know how the public schools which they support operate. Here, also, the radio can play an important rôle in disseminating information.

Even greater, however, is the opportunity to use radio directly and indirectly as a means of adult education. Educational attainments of the average American citizen have been virtually doubled during the last quarter of a century. The demands for continual educational opportunities, likewise, have increased.

If the public school system sees fit to assume any direct responsibility, the local broadcasting can be of invaluable assistance. Since the children of the community will profit both directly and indirectly from any plan of adult education that involves broadcasting, the use of broadcasting seems doubly desirable.







## Picture Education—The Mechanics of Its Operation\*

By HARRY H. HAWORTH, Supervisor of Visual Education, Pasadena City Schools, Pasadena, Calif.

THE dictionary card catalogue is made out on 3 by 5-inch cards according to standard library rules and contains artist (author), title and subject cards, with as many different subject cards as the picture or set of pictures may be profitably used to illustrate.

Each separate card, or course, carries the complete classification number in the upper left corner so that the picture may be easily located in the file. On the back of the title card a tracing is made, for use of the librarian only, of each additional subject card made referring to that title, so that in the case of discontinuance or any other change, all cards referring to this title may be with-

drawn from the file. By means of this cross reference card catalogue, special studies may be dealt with at great length following all changes in the course of study, yet leaving the material in its logical place.

Every set of material organized in our department is inventoried. The inventory is a complete record of the classification number and the title of the set with a list of every item in the set by title, the source of each, the producer's number, the cost and the date of its receipt. In this way it represents a complete history of every set in our department and may be referred to at any time. Inventory cards are filed numerically.

In making out the loan cards we use only the classification number, copy number and number of items in the set. Therefore, in case a set is returned with an item missing, we may learn its title to in-

\*The first part of this article appeared in the December issue.

*The supervisor of visual education (left) instructs a group of children in the operation of a stereopticon. The circulation department (above) checks, inspects and repairs the visual aids when they are returned each week.*



*These are two little farmerettes of the Scratchfoot Ranch, Grant School, Pasadena. An average of 400 photographs are taken each year.*

curriculum. We believe that this can best be accomplished by grouping the pictures in small sets relating to one subject or theme. Our sets run from a minimum of two to a maximum of fifteen pictures, with an average of five. This applies to lantern slides, stereographs and small study prints. Many of the large wall prints, posters and charts have to be handled separately because it is practically impossible, physically, to group them into sets. They are used in so many different ways and for so many different purposes that it is not advisable to try to organize them into units. We believe that the best practice is to use one carefully selected wall picture with one or two sets of small study prints or stereographs to supply the necessary information suggested by the study of the

large one. Teachers find this a helpful method.

form the teacher definitely of what is missing, or the producer and his number for replacement, simply by consulting the inventory record for that particular set.

Duplicate sets are listed on another inventory card of a different color, which lists the contents of the set and the date it goes into circulation, with a space for any additional remarks that may be necessary to complete the record.

Since the visual instruction department furnishes materials which will assist the teachers to make more meaningful the experiences of the child, it is necessary to organize these visual aids by some scheme which will correlate with the

We have adopted the plan of keeping our flat pictures flat by mounting them on suitable cardboard and filing them in vertical files. For this purpose we have had our carpenter shop build a number of wooden boxes with heavy pressboard guide cards and an adjustable back support, so that the boxes operate similarly to a regular letter file, except that they have hinged lids and measure 25 inches in width, 26 inches in length and 30 inches in depth. This type of box is used for our large flat pictures, and we plan our mounts to conform to this size as much as possible. Of course, there are some pictures too large for this file which



*A boat building activity at Linda Vista School. These two youngsters are engrossed in boring a hole for the mast of their little model.*

may be mounted on cloth, and others which can be purchased only on cloth, and consequently have to be rolled in order to be handled satisfactorily. They are shipped in long slender canvas bags made for the purpose.

Medium size wall pictures are filed in a smaller box, made in similar fashion, which measures 16 inches in width, 26 inches in length and 20½ inches in depth. This is built with legs so that it stands at a convenient height from the floor. We also use a three-drawer steel file which accommodates pictures up to 14 by 17 inches, designated as small wall prints.

The study prints are grouped in sets, each set being placed in an envelope and filed in either a letter or a legal file, depending upon the size.

For shipping purposes we use envelopes made in four sizes with tension ties, for example, 19 by 42, 24 by 32, 18 by 25 and 12 by 16 inches, to accommodate the standard picture sizes we use. These envelopes stand up well under the service they receive, especially when reinforced with tape along the top and bottom edges.

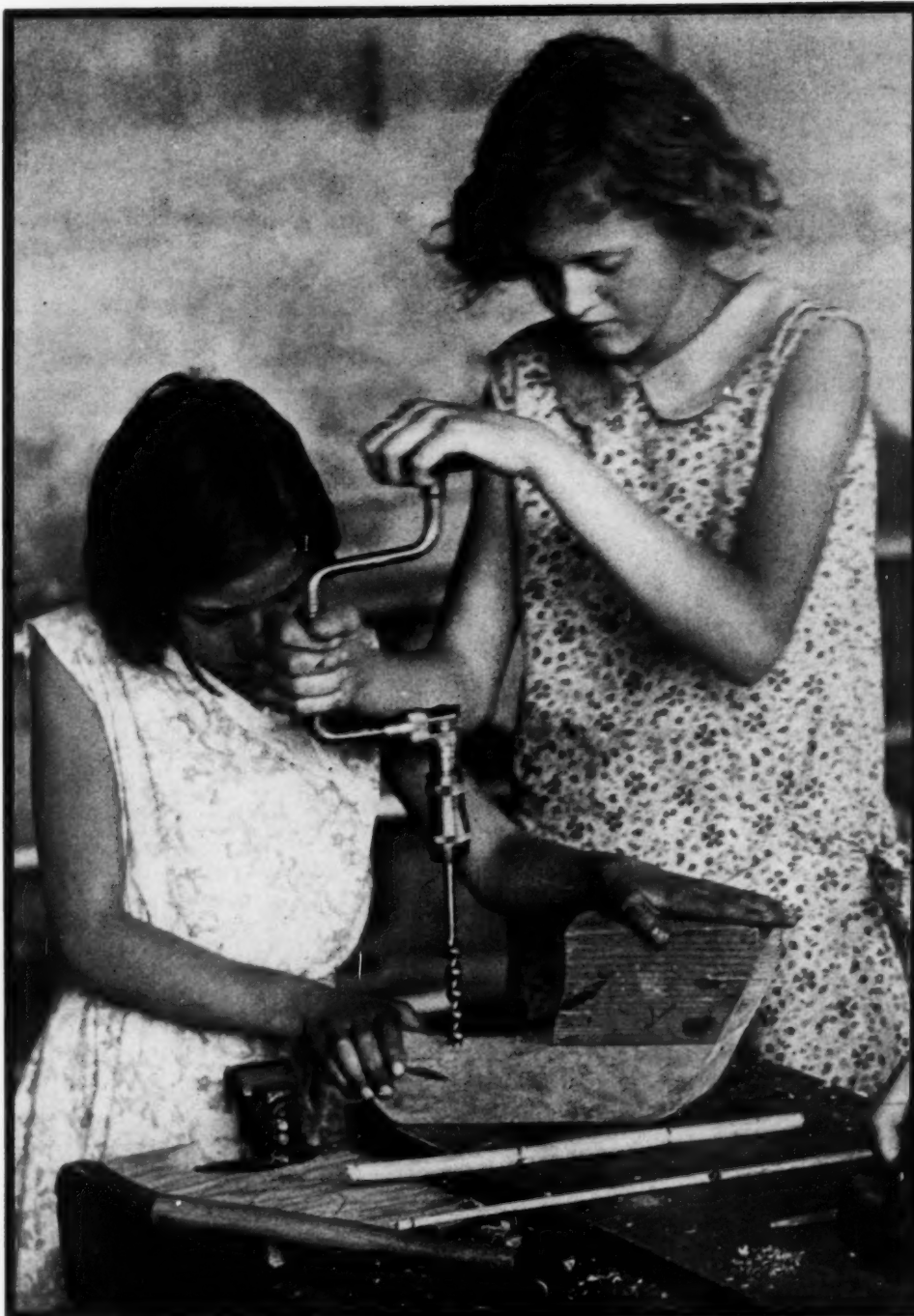
Our lantern slide sets, which are kept rather small, are placed in fiberboard boxes, measuring 3¼ inches in width, 3 inches in length and 4 inches in depth, with cardboard separators to prevent breakage of slides in handling. The title of the set and the number of slides in the set are typewritten on a sticker which is placed on the end of the box. The call number of the set and its copy

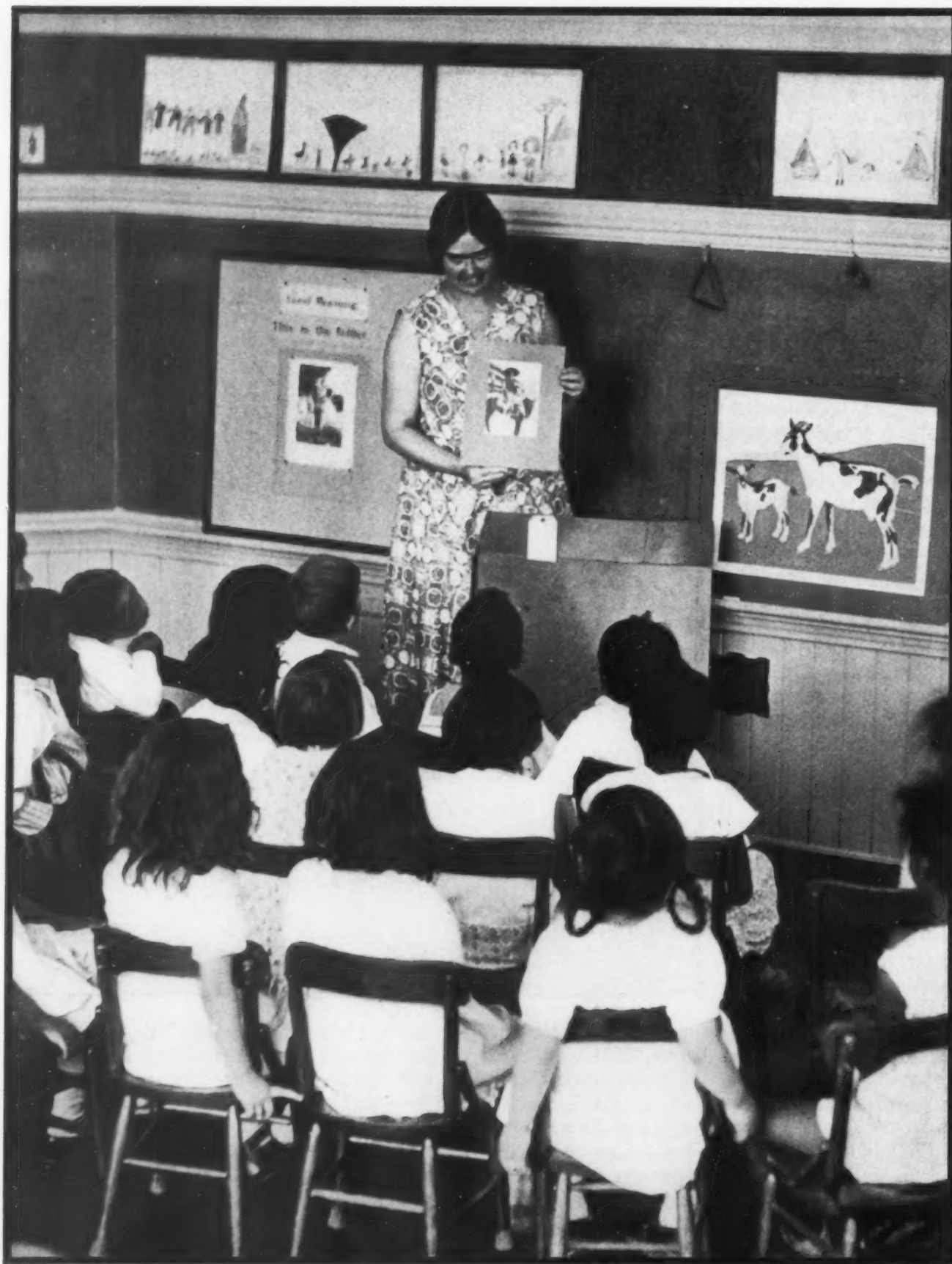
number are lettered in ⅜-inch letters directly on the box, beneath the sticker, with India ink.

Lantern slide sets are filed numerically on shelves which measure 9¼ inches in depth and 4¾ inches in height, thereby being deep enough to accommodate two boxes, one in front of the other, in cases of duplicate sets.

For lantern slide shipping boxes, we use another fiberboard box 4 inches wide, 8 inches long and 5 inches deep, which is large enough to accommodate, easily, two of these smaller boxes. This gives ample protection, since the delivery is made by truck and there is little rough handling in shipping.

For stereographs we use a standard 1½-inch





*Flat pictures being used to arouse interest in a first grade class, where many of the children do not speak English. The pictures have just arrived from the visual education department and are being examined for the first time.*

JOB ANALYSIS TABLE FOR 1931-32					
		Projectionist	Clerk	Teacher	Supervisor
<i>Circulation of Visual Aids</i>	Service to Teachers and Principals	8%	18%	24%	25%
	Booking Visual Aids	0%	27%	7%	0%
	Putting Up Orders	34%	13%	28%	0%
	Inspecting, Repairing and Shelving	44%	25%	24%	0%
	Maintenance of Visual Aids	4%	0%	0%	0%
	Instruction of Teachers and Pupils in Operation of Projection Equipment	4%	0%	1%	1%
		94%	88%	84%	26%
<i>Organizing Cataloging and Production</i>	Organization of New Materials	0%	0%	6%	10%
	Photography	0%	0%	0%	14%
	Mounting and Inventory of New Materials	4%	4%	3%	0%
		4%	4%	9%	24%
<i>Administration and Supervision</i>	General Secretarial Duties	2%	8%	0%	0%
	Selection of Visual Aids and Projection Equipment	0%	0%	7%	20%
	Administration of Visual Education Program	0%	0%	0%	30%
		2%	8%	7%	50%
		100%	100%	100%	100%

expanding wallet type envelope, measuring 4 by 7 inches, with a string tie. The call number and title are lettered from left to right across the envelope. The call number is also lettered across the top edge of the envelope so that it may be seen as the envelopes are placed together in the file. There is a seven-drawer steel file for 5 by 8-inch cards, which accommodates two rows of these stereograph envelopes in each drawer, which we think is the best method of filing stereographs.

A supervisory practice which has proved very helpful is to hold a series of meetings, once each semester, of all teachers of each of the elementary grades and of each department of the secondary schools, in the library room of the visual education department. At these conferences, instruction is given in the operation of projection equipment, suggestions are made regarding the use of visual aids, and the new pictures that are available are exhibited.

Upon invitation of the principals, we meet with the faculties of different schools to discuss problems of special needs. To these meetings we take some of our materials and give a demonstration of visual methods and materials.

We strongly recommend that the teachers call at least once each semester at our department to see and select the materials they wish to use. It is then possible for them to make out a schedule of the pictures they wish to use and leave definite

requests for the rest of the term. These orders are then put up by our shipping department and delivered to the teachers as scheduled.

Every organization comes into contact with its public through a multiplicity of eye impressions. Its reputation may depend in a large measure upon the eye appeal it makes to the outside world. In



The steel file in the background is used for small wall prints. The other files are used for the larger flat pictures.





*This picture shows the types of containers used for lantern slides, stereographs and stillfilms.*

hundreds of homes, people are turning the pages of the newspapers and magazines and judging the schools by the way they are represented on the printed page. Good will, made up of favorable convictions or opinions of the public, is the substance of every successful public school system, and good pictures, well designed, can help to create that good will.

The schools of today believe in an integrated activity program in which the children are given an opportunity to express themselves and to develop their interests and talents under the guidance of their teacher. This is an entirely different type of school from the one in which our patrons were educated a generation or more ago. It is at times difficult for them to realize that the new school is giving the fundamental instruction in the three R's, as well as carrying on so many interesting activities.

The publicity service of the school system, which is carried on to acquaint the patrons of the district with the activities and accomplishments of the schools, makes effective use of the photographic



*Lantern slides, stereographs and flat pictures are shipped to the schools in the manner shown in this picture.*

service of our department to show, in a concise pictorial manner, some of the outstanding achievements of the classrooms.

Since the spring of 1928, when the first equipment was purchased, we have obtained a file of 1,500 school photographs, an average of nearly 400 pictures each year. They consist of views taken in classrooms, shops and laboratories, showing the projects and activities of each. Then, there are the graduation scenes, school floats, P. T. A. activities, views of school buildings, interiors and exteriors, and the school grounds, many of which have been entered in exhibitions and contests, the most recent



*A projection printer is used for making enlargements in the photographic laboratory of the department.*

entry being in a school building contest held in France. Many record photographs have been made in connection with law suits, condemnation proceedings, and other pictures of a legal significance.

Many lantern slides of school activities have been used by members of the administrative and instructional staff for lectures, demonstrations, publicity work and exhibits.

Sixteen millimeter motion picture films of classroom activities and special projects have been prepared which have been used for instructional purposes and also for exhibition at meetings.

# Larger Classes Have Their Advantages

*Of thirty-five published experiments studied, eleven showed an advantage in large classes, twenty revealed no difference in results, while four showed that the smaller class produced better results*

By M. R. KEYWORTH, Superintendent of Schools, Hamtramck, Mich.

THE per capita cost of instruction in high schools is generally much higher than in the elementary or intermediate schools. During recent years the enormous increase in secondary school attendance and the comparatively high per capita cost of secondary school education have increased tremendously the total cost of public schools.

At a time when all public expenditures are being closely scrutinized and criticized, and when retrenchment is a popular demand, it is of utmost importance that those measures of economy be selected which will detract as little as possible from the value and effectiveness of instruction. Enforced revision of an educational program gives an opportunity to eradicate the evils that exist because of inert traditionalism, worn-out methods and practices and entrenched personnel.

However, at such a time, there is also the possibility that the forces of reaction may overwhelm and eliminate the tendencies for improvement. A period of retrenchment is generally not propitious for launching projects, but there is a chance to make such a period serviceable in conserving the best and in eradicating the least desirable features of current practice. Specifically, where poor practices can be proved costly, the cry for economy may be used to defeat the forces of traditionalism and entrenchment which are able to sustain poor practices when there is no aroused public sentiment.

## *Can the Small Class Be Justified?*

This disquisition is to consider the theorem that the comparatively small class in the secondary school cannot, as a rule, in the light of present evidence or of sound educational objectives, be justified whether times are good or bad, whether money is plentiful or scarce. In achieving educational goals, the optimum returns for each dollar expended are not secured in the small class, and

therefore if the small class is justified at all, it must be justified on other grounds.

Grounds that may temporarily justify the small class are:

1. Inflexibility in the design and construction of existing high school buildings.
2. The impossibility of changing quickly the habits and attitudes toward larger classes of the available number of high school teachers.
3. The demonstrated need for offering certain courses to a limited number of pupils.
4. The necessity for working with individuals or with small groups while carrying on certain types of diagnostic or remedial work.

## *Why the Large Class Is Preferable*

In theory the large class is preferable to the small class for the following reasons:

1. The purpose of public education is to preserve and enhance a democratic system of society. In a democracy, individuals must be trained to see problems, to find solutions for problems, and when solutions are known, to achieve results through voluntary, intelligent, coordinated effort.
2. Our machine civilization has multiplied contacts among persons, it has increased the size of groups, it has created new problems in human relations, it has introduced new tools and agencies for group action and group influence, it has created conditions that require new values, new major attitudes and new techniques in democratic mass action. We have to live among greater numbers of persons, and inferentially children should live and associate with greater numbers in class activities.
3. The major problem of democracy is to secure both liberty and unity, to preserve individualism in organized group activity, to foster progress and maintain stability, to train for self-direction, self-control and self-appraisal while engaged in intelligent, voluntary, cooperative activity. The purpose of secondary education is far more com-

prehensive than mere achievement in subject matter. More important than achievement in subject matter is the development of proper attitudes toward, and right ideals of honesty, truthfulness, courage, persistence, self-reliance, self-control, progress and service.

#### *Largest Classes Should Be for Seniors*

It requires intelligence to perceive the fine distinctions and evaluations in human relationships involved in honesty, but it requires strong attitudes for honesty and against dishonesty to lead an individual to will to act honestly. Intelligence perceives the distant goal; right attitudes keep one on the road that leads to it. It does not appear that we are suffering today from the lack of knowledge of Latin, algebra, chemistry or mechanics. We are the victims of wrong attitudes and ideals. Solutions of our problems are known. But we have not strong enough attitudes to impel us to go ahead cooperatively and to put these solutions into effect. There is something to be said for the development of habits, skills, attitudes and ideals necessary for voluntary, intelligent, cooperative mass endeavor. And there is just as much to be said for the large class as a better means for their development than the small class.

4. At least from one point of view a valid obligation of a high school teacher is to make himself unnecessary. The majority of high school pupils, when they pass out of high school, leave school forever. Surely, as pupils go on through school, they should progressively become able to do more and more through self-direction and less and less under teacher direction. Theoretically, the longer a class remains in school, the larger it should become. However, the facts show that the reverse is true. The largest classes are found in the elementary school, the next in the junior high school and the smallest classes in the senior high school. Must the conclusion be drawn that the longer a pupil remains in school the more helpless he becomes? Is it not reasonable to assume that the largest classes should be found in the senior high school?

5. The use of tools and machines in facilitating production in industry has a counterpart in the use of textbooks, work books, lesson sheets, library, equipment, blackboards, display cases, visual and sound apparatus and various supplies in facilitating instruction. If proper evaluation is made of effective classroom design, organization, equipment and supplies, it becomes obvious that the place occupied by the teacher as instructor and director becomes relatively less important. Does not the greater function of the teacher become that of inspirer and stimulator, adviser and counsel-

lor? In a good modern classroom is it not possible to have more pupil direction and less teacher direction, more pupil control and less teacher control, more self-appraisal and less teacher approval than generally prevail? And under such conditions, is it not conceivable that a class may function with less standardization and with greater individualism and with more voluntary, intelligent, cooperation?

Whether or not we subscribe to the hypothesis that the comparatively large class provides certain instructional advantages not possessed by a smaller class, it is necessary to review the objective evidence relating to class size. Only during the past fifteen years has it been possible to make comparative studies of class size because only during this time have standardized tests been in general use. Even at the present time the standardized achievement tests are limited in the range of their usefulness. Even with proper measuring instruments, there are variables sufficiently difficult to control to render data not wholly reliable and comparable.

To carry on an experiment that would approach absolute scientific accuracy, it would be necessary to have two classes, one large and one small, with pupils in one class being paired identically with pupils in the other—the pairs having identically the same intelligence, the same emotional natures, the same background of experiences and the same learning potentialities. Then during the experimental period the pairs of pupils would have the same environmental connections, and would have, also, the same teaching. All elements would be identical except that of class size. Then it would be necessary to measure all educational products both before and after the experiment in order to compare results.

#### *Discovering Trends*

So nearly exact an experiment is obviously impossible. However, it is sound procedure to match pupils as nearly as possible, to keep the subject matter and the teaching in both large and small classes as nearly the same as possible and to measure as nearly as possible the results. Then, if enough cases are taken to make adequate statistical analysis possible, and if due allowance is made for possible variables and errors, it is reasonable to assume that the trends revealed by the objective data are, at least, suggestive. The trends are the most reliable evidence obtainable.

In exhaustive experiments carried on at the University of Minnesota by Prof. Earl Hudelson and others six or seven years ago, fifty-nine experiments, involving 6,059 students with 1,288 pairs, showed that in forty-six of the experiments, or 78



per cent, a more or less decided advantage in achievement accrued to the paired students in the large sections.

In the published accounts of eighteen different experiments or studies made in elementary schools and relating to class size in some manner or other, five showed results specifically favoring the larger classes, thirteen indicated that the class size was no factor, and one favored the smaller class.

#### *The Results of Various Experiments*

In twelve published experiments concerning class size in high school, five showed more or less advantage in the large class, six showed no difference, and one favored the small class.

Of five published experiments concerning class size in higher institutions, two showed an advantage in large classes, one was neutral, and two favored the smaller classes.

Of the total of thirty-five published experiments which I have examined, eleven showed an advantage in larger classes, twenty revealed no differences in results, while four showed that the smaller classes produced better results. In all of these experiments, the only measurement was that of subject matter achievement.

In the Detroit high schools both last year and this year, trials have been made in conducting classes ranging in size from sixty to seventy-five pupils in literature, biology and social science. The conclusions thus far reached there are that with the proper teacher using correct methods and techniques, the large class does as well as the small.

During the past few years there has been carried on in the Hamtramck, Mich., public schools considerable experimentation affecting class size, directly or indirectly. These investigations and experiments have consistently revealed one significant trend, which is, that the progress of children through school is determined more by making the conditions for individual activity favorable for growth and development through individual activity than by the academic activities of the teacher. In other words, a classroom planned for both individual and group activities, with the correct classroom design, with proper seating arrangement, with suitable materials, supplies, books and other instructional agencies, and with adequate and appropriate lesson sheets and check sheets, together with a teacher whose business it is to stimulate and advise, can produce better educational results than can the typical academic teacher in a traditional type of classroom.

These desirable and determining factors can be provided in large classes as easily as in small ones. Given the opportunity for proper activity, either group or individual, children learn and grow in

power regardless of teachers. The greatest service the teacher can render is in inspiring and counseling her pupils and not in direct teaching of subject matter.

In the Hamtramck High School, experimental classes have been carried on in English, mathematics and social sciences with as many as ninety pupils in a class with one teacher and a clerk. Experimental classes of fifty, sixty and seventy pupils have been carried on with one teacher and no clerk. Results indicate that if the teacher uses the proper methods and if the lesson sheets are properly constructed, the pupils in very large classes equal or surpass those in small classes with strictly teacher-directed teaching and learning.

It would be rash to take the position that the larger class is always and everywhere superior to the smaller class. No such inference is made. But in the light of present evidence, the smaller class cannot be justified in general. The burden of proof rests on the advocates of the smaller class. The expenditure of the additional public funds requisite for sustaining the smaller class must be defended with better evidence than is now available, either factual or theoretical.

Undoubtedly the definite and final answer to the question of class size or of teacher load has not been found. There is yet much investigation needed. But the question has now become sufficiently disturbing to stir secondary schools from their complacency because budgets these days cannot be built on sacred practices or on condoned lethargy.

#### *These Subjects Require Immediate Study*

It seems that the following subjects need immediate and exhaustive study.

1. The goals of secondary education need to be more clearly determined in terms of present social and economic conditions. Secondary schools and secondary school teachers need a clearer and sounder philosophy of education. Educational products other than subject matter achievement need to become a conscious and vital part of classroom procedures. Individual growth and development need to be measured.

2. Teaching methods best suited to larger classes need to be refined in terms of educational objectives. There are at the present time a limited number of able teachers who can conduct a class of almost any size better than the mediocre teacher can conduct a small class. Such able teachers are worth more than ordinary teachers and should be paid more. Objective evidence is needed to defend superior work with larger numbers, to reward with money such superior service, and thereby save the profession from pauperism. Training of

the secondary teachers now in service in better methods of teaching larger classes is wise economy, beneficial to the teacher, to the pupils and to the taxpayers.

3. The utilization of physical aids, such as lesson sheets, supplementary material, self-check sheets, visual and sound apparatus and similar devices, reduces the direct instructional work of the teacher and when these aids serve the pupil in self-help, self-direction and self-appraisal they possess an instructional value that any teacher will find it difficult to supplant. Their more extended use in classroom procedures carries possibilities not only for improving instruction but for better means of individualized group instruction.

4. The traditional high school building with small classrooms often prevents much variation either in the size of class or in the curriculum. Who knows whether it may not be possible, with a reorganization of high school buildings, with reorganized curricula, with greater means for pupil self-direction, with fewer teachers and more counselors, diagnosticians, clerks and other means for improving instruction, to provide much superior training for high school pupils, and, perhaps, at a much less per capita cost?

#### *Teaching Load Vs. Number of Classes*

The teaching load, or the class size times the number of classes taught, is a pressing subject not to be disregarded. If a teacher teaches larger classes, should he teach fewer classes? The answer to this is not different from that of class size. Larger classes cannot mean fewer classes under present conditions and with present evidence. In Detroit this year the average number of pupil hours per teacher per week is 911. The maximum number recommended by the North Central Association is 750. This is 21 per cent more than the maximum. And Detroit has not found any evidence whatsoever of poorer work done by high school pupils.

In the Hamtramck High School the pupil hours per teacher per week are 1,038.

A rather intensive program has been carried on during the past four years in the Hamtramck public schools in training teachers in the philosophy, methods and techniques of individualized mass instruction through activities involving self-direction, self-control and self-appraisal. As the teachers have gained control of new teaching practices, the classes have been consistently increased in size. At the present time the average class size in the elementary schools is forty-three; in the junior high schools, fifty-two, and in the senior high school, forty-one.

During the same time the standards of equip-

ment, textbooks, materials and supplies have been progressively altered to promote instructional service. Next to teacher training the proper construction and use of lesson sheets has been the most vital factor in the success of this program. With all available means for determining educational products, the results obtained have shown constant improvement. At the same time the per capita cost of instruction has constantly diminished.

### Proposed Legislation That Is Under Consideration in Pennsylvania

At a recent meeting of the Pennsylvania Education Congress, Dr. James N. Rule, state superintendent of public instruction, stated that the following proposals had been presented to the next legislature by the finance committee of the Commission for the Study of Educational Problems in Pennsylvania:

"(1) To establish a new principle in the distribution of public school subsidies by providing a teaching unit based on pupil ratios, with quotas of \$1,200 and \$1,300 per unit, respectively, for eight and nine-month school terms; the school district to levy a maximum six-mill tax on true valuation of assessable property, if necessary, and the state to make up the difference needed for each unit, including an outright \$300 appropriation for each unit. (Estimated saving to the state of \$4,000,000 for the next biennium.)

"(2) To effect temporary emergency relief for the 1933-35 biennium by providing that the prescribed annual increments in excess of salaries paid during the previous biennium may be suspended and that the minimum salaries of full-time members of the teaching and supervisory force may be reduced not to exceed 10 per cent of the salaries paid during the school year 1932-33. (Maximum saving to school districts of \$10,000,000 a year for two years.)

"(3) To amend the school law to provide that the present state payment of \$200 annually for each school permanently closed be continued, not to exceed ten years from the date when closed, and that no district be reimbursed for additional schools closed. (Estimated saving to the state of more than \$700,000 for next biennium.)"

In discussing these proposals Doctor Rule stated that they had been subjected to thorough discussion by a wide range of agencies and that the commission felt justified in presenting them with the assurance that in principle they met adequately certain outstanding problems now confronting education.



## Getting Clean at the Seaford School

*Modern educators are emphasizing health teaching and stressing the importance to the child of experimenting with the idea that is to be grasped instead of merely hearing about it*

By W. B. THORNBURGH, Superintendent, Seaford Special School District, Seaford, Del.

FOR more than a year a consistent organized effort to encourage better cleanliness practices among the children has been carried on in the Seaford School, Seaford, Del. For all classes, satisfactory handwashing with soap under warm running water, before luncheon and after toilet takes place consistently. As a result the children are cleaner and more alert and they have acquired new enthusiasm for their work and play as well as a keener appreciation of the esthetic and health reasons for hygienic living.

Also, absence due to communicable disease has been reduced, probably as a result of the handwashing plus other good health habits that have been taught in relation to the cleanliness program. As no records were kept prior to January 1,

1932, few statistics are available in this connection, but each year the various communicable ailments have again and again amounted almost to epidemics. Occasionally half of a class would be absent at one time. From January 1, 1932, until the end of the term there were 88 cases of measles, mumps, chickenpox, scarlet fever and diphtheria throughout the school, which teachers agreed was a very low figure compared with a similar period in other years. From September 6 to October 31, 1932, not one case of any of the diseases listed above appeared.

Since many factors are involved in the reduction of communicable disease, it would be impossible to prove that one set of activities deserved any definite share of the credit. Yet indisputably absentee-



ism caused by transferable illnesses decreased coincident with the new emphasis on cleanliness procedures. The fact is highly gratifying, but the general benefits to school morale would justify the expenditure of effort and money even though actual sickness had not been lessened. Other schools which seek similar benefits will probably want to know what cleanliness costs at Seaford, and how our campaign originated and is being carried on.

#### *Facilities Were Supposedly Ideal*

The need for action in connection with the school's cleanliness practices was crystallized by a report from Aurelia B. Cate, the instructor in biology and chemistry, who also serves as director of health education. Miss Cate instigated a pupils' study of the situation and early in 1931 reported not only to myself, but also to the principal, W. L. Torbert, Jr., to E. A. Simon, member of the Delaware State Board of Education and at that time president of the Seaford Board of Education, and to the school's parent-teacher association. Conditions revealed in that report, while they were not worse than those found in a majority of schools and were better than are found in many, were deplorable when considered in the light of their significance to child health and the attitude of the children toward cleanliness practices. Those conditions, together with general information that the reader not familiar with the school will need, are given below.

1. When the Seaford Consolidated School, a gift to the people of the community from Pierre du Pont, was erected at the cost of \$385,000 and opened for use in September, 1929, it was thought that facilities for the promotion of cleanliness were ideal. Toilet rooms for boys and for girls, adequately equipped with stools and urinals, are on each of the three floors. On the first floor, used by primary grades, each room has two washbasins, and on the second floor each room has three washbasins. On the third floor, used by the smaller number of high school pupils, there is one washbasin in each room.

Yet with twelve washbasins in the building, no provision had been made for warm water, so important to comfortable, efficient handwashing. All the basins are equipped with spring faucets, making handwashing under running water impossible unless a second person were to hold the faucet open for the washer. The undesirability of having school children fill basins for washing is obvious when the time required to do it is considered and, perhaps more important, the difficulty of cleaning the bowl adequately after each user.

2. Paper towels were provided for handwashing but were available only occasionally. During

the football season a number of cases of athlete's foot and other skin infections had developed among the boys on the team. The reason was sought in the dressing room, where twenty boys were found using two unclean towels.

3. Liquid soap dispensers had been installed at the time the new school was built, but the children had made toys of them and put them out of commission. Naturally enough, the board was hesitant about purchasing other dispensers. Without dispensers to put the soap in, several gallons of soap stood in the storeroom unused.

4. No time was assigned in the school program for handwashing and seemingly very little was taking place. The high school girls' biology class made a study in the washrooms used by the elementary grades and reported that among the 345 girls observed, only 127 washed hands after going to the toilet. If 63 per cent of the children were returning to classrooms without washing their hands, when they inevitably passed by the basins, it is safe to assume that not many made special trips to the washrooms in order to scrub their hands before luncheon.

Mrs. Stella West, manager of the cafeteria, testified to the reliability of the assumption. She is a woman with home economics training and a thorough understanding of health problems. Upon a number of occasions she had sought the cooperation of teachers in coping with the "dirty hand" procession which daily passed by the food counter. The usual instruction in cleanliness was faithfully given in the classrooms, but still grimy hands reached for food. The luncheon problem is an important one because practically all the 850 children eat at school, since 50 per cent come in busses, many from long distances.

#### *Made a Part of the Program*

Such was the situation. The evident pupil interest, as well as the facts of the report, convinced all those receiving it that something must be done to improve conditions. It was clear that action must take place along several different fronts at one time. Mr. Simon took the need for hot water before the board of education. There was delay because the board, like almost every other board, has to meet many demands for the money at its disposal. Then, too, the objection was raised, "But an ideal school was built only three years ago! Surely a major alteration is not needed so soon!" However, the logic of the request won the day and installation of a heater and necessary plumbing were completed January 13, 1932, at a cost of \$310. Prior to that date, soap dispensers had been installed and paper towels purchased.

Meanwhile the daily school routine was reorgan-

ized to give handwashing before luncheon a regular place on the program. Modern educators are emphasizing health teaching. At the same time they are stressing the importance to the child of actually experimenting with the idea that is to be assimilated, instead of merely hearing about it. What, then, is more logical than that at least a few minutes of school time should be devoted to the practice of those cleanliness habits so important to health? Particularly does it seem sensible to put handwashing in the curriculum when consistent cleanliness practices make the child look better and

possibility to serve all the children at once. Five minutes may seem a brief period to allow, but with washrooms on each floor, actually forty children can leave the classroom, wash and return to it in three minutes. We prefer not to hurry them to that extent, however, for they enjoy the program, and the chief purpose of the supervised washing, after that first obvious function of getting hands clean before they handle food, is to teach the child to regard cleanliness practices as pleasant and desirable.

The solution of the supervision problem has, it is



*Putting before luncheon handwashing in the school program did what years of faithful classroom cleanliness instruction could not accomplish. No longer do grimy hands reach for food in the cafeteria.*

feel better, thus improving the whole day for both teacher and child.

Seaford's handwashing activities are carried on by classes in the elementary grades which occupy the two lower floors. A five-minute period is allotted to each class of from thirty to thirty-five children. As there are six classes on the first floor and seven on the second, the washing is in progress thirty and thirty-five minutes respectively. Thus dismissing the children in small groups reduces congestion not only in the washrooms but in the cafeteria as well, where it would be a physical im-

believed, slain a gorgon-headed dragon. The job has been turned over to the seventh grade pupils, about eighty in number. They do the work well without making it necessary for the teacher to leave her classroom for a second, nor is the janitor called upon for assistance. At the same time the pupils are acquiring health education credits and developing the ability to organize and lead. The excellent results from the system are in large measure due to the cooperation of Mrs. Katie L. Handy, seventh grade teacher and director of the school's safety education program, who saw in the plan to



*The janitor's gallon measure, with nozzle and handle, helps him fill the soap dispensers efficiently and quickly.*

give special responsibility for the handwashing program to her boys and girls an opportunity to give them a highly desirable training.

On each of the two floors six boys and six girls from the seventh grade serve as handwashing monitors each day. As the monitor teams are rotated, all the class has a share in the project. The captain of the team notifies each teacher when the washroom is ready for her children, and a seventh grade boy conducts the boys to their washroom, and a girl conducts the girls to theirs. The system is the same in each room.

#### *Pupils' Hands Are Inspected*

As the children come from the toilets, they form in line. At the first of the two basins, hands are wet at a faucet which is opened only as wide as is necessary by one of the monitors. Care is taken to save water where saving does not prevent thorough handwashing. A second monitor sees that a few drops of soap are secured speedily and the washer passes on to the next basin, lathering as he goes. Here he washes off soap and dirt under warm running water. These faucets also are held open by a monitor. Another seventh grade child supervises the distribution of paper towels which are put in the waste basket after use. The inspector stands at the door and accepts or rejects as clean or unclean the hands of the children who are ready to go out.

The monitors help each other wash. The seventh grade pupils have assumed responsibility for the cleanliness program with such thoroughgoing enthusiasm that there is no danger they will omit

practicing the principles they teach the younger children. In the high school we depend upon educational efforts without a supervised systematic washing, though teachers endeavor to check up on actual practices as often as opportunity permits.

Before and during the establishment of the handwashing program, an intensive campaign of cleanliness education was carried on in all the classrooms to ensure the right attitude on the part of the children. Literature from such organizations as the Cleanliness Institute was used in various connections. The director of health education and the school nurse actually demonstrated for the primary children how to wash hands properly, and handwashing posters were placed in all the washrooms. Cleanliness was made the subject of a mimeographed and colored pamphlet used at a parent-teacher meeting with a view to gaining the cooperation of parents in the cleanliness efforts.

As a result of all this emphasis, cleanliness practices have become "the thing" at Seaford, with the children themselves promoting their regular observance. The children's habits, aside from the supervised before luncheon washing, are by no means perfect, but certainly they are much improved. A summary of three surveys made recently in the washrooms by the girls' biology class shows that 60 per cent of the elementary pupils are washing their hands after going to the toilet as compared with 37 per cent in 1931. It may be desirable to have a regular, supervised washing after the toilet recesses as well, but so far it has seemed impossible to allow time in the program for it. And certainly there are some arguments in favor of leaving the cleanliness practices, if possible, to the individual initiative of the child, for, if education is effective, they must in the end become an automatic and natural part of his daily living.

The popularization of cleanliness has not been entirely the result of talking about it. No doubt a potent factor has been the improvement in facilities. Instead of the discomfort of washing in cold water on a winter day, the children now always find warm water, and towels and soap are available at all times.

#### *No Longer Tinker With Fixtures*

The janitor's interest has been enlisted in the campaign and he would sooner neglect to sweep the floors at night than to make the rounds of the washrooms twice daily to clean and tidy them and see that soap and towel dispensers are full. He has been provided with a gallon measure with nozzle and handle, which makes it easy for him to fill the soap dispensers efficiently and quickly.

Because of the difficulty of attaching dispensers



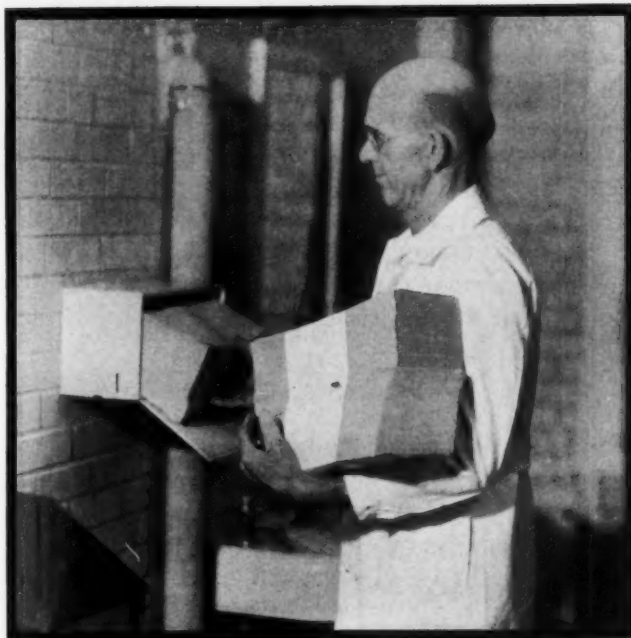
to brick walls, the dispensers have been screwed to the mirror frames—not an ideal arrangement, perhaps, but the important thing is to have the soap. It may be well to mention, however, that the children no longer tinker with and break the fixtures. The washroom fittings have become prized possessions to be used and cherished.

#### *Selecting the Best Soap*

Various types of paper towels are being experimented with to discover the one best suited to the needs, but a satisfactory soap has at last been found. It may be useful to describe our method of investigation, which was carried on while the soap that had stood in the storeroom for so long was being used. We wanted the best liquid soap on the market. To guide us in its selection we had the government specifications which are:

Anhydrous soap .....	15	per cent minimum
Chlorides .....	0.3	per cent maximum
Free alkali .....	0.05	per cent maximum
Matter insoluble in		
alcohol .....	0.5	per cent maximum

Representatives of various soap companies called and left samples which were tested for alkalinity in the school chemistry laboratory, where the testing proved an interesting practical problem for the pupils. The method of using phenolphthalein as



*The janitor inspects the washrooms twice daily to see that everything is in order. Seventh grade pupils (below) hold open the spring faucets, dispense soap, pass out towels and inspect hands. They are winning health education credits, and developing qualities of leadership.*



indicator was employed. From two different firms of consulting chemists, also, we secured reports on the soaps. From information they provided and the chemistry tests we made the selection.

The liquid hand soap now being used in the cleanliness program of the Seaford School is made according to the government standards from the edible or next to edible grade of coconut oil. It is well to remember that the better grades of oils are highly desirable in soaps for the skin.

#### *The Cost of the Program*

A comparison of figures shows that we are now spending more money for soap, towels and water than before the cleanliness program was begun. It is notable, however, that with supervised washing under running water before luncheon and with education of the children about how to do their after toilet washing, we have the entire school population washing consistently with only a slight increase in water rate over the period when hands received no attention whatever. Bills for 1930-31 were as follows:

Soap, trial liquid soap used, no bill incurred	
Towels, 7 cartons.....	\$ 29.65
Water .....	132.74

Total.....\$162.39

The bills incurred during the school year 1931-32 were higher than during the previous term,

due to the greater number of pupils washing. The costs were as follows:

Soap, 30 gallons.....	\$ 17.00
Towels, 50 cartons.....	208.00
Water .....	147.70

Total.....\$372.70

It is probable also that our new interest in and emphasis on soap and water cleanliness in the washrooms themselves, as distinct from the old method of killing odors with the odor of a disinfectant, accounts for the fact that during 1931-32 we spent \$90 on soap for cleaning purposes as compared with \$40 spent the preceding year. In addition to the operating cost of our cleanliness program, we must in fairness record the \$310 spent for installing the water heating apparatus and the amount paid for the six soap dispensers, which was \$9.

Nevertheless, with this additional expenditure there is now consistent and enthusiastic effort on the part of the children to carry out desirable cleanliness practices whereas before we had little handwashing. Results have more than justified the spending of the money—indeed, an economy has been effected, for the \$162.39 spent before the beginning of the cleanliness program was to a great extent wasted, since the children were not protected as they are now by consistent cleanliness efforts, by the small expenditure of only \$372.70.



# Punishment Versus Adjustment for Problem Children

*Twenty-five or thirty years ago it was not difficult for a child to fit himself adequately for life, but new conditions have brought new demands and new conflicts*

By ALBERT D. GRAVES, Director of Special Education, San Bernardino City Schools, San Bernardino, Calif.

**H**OURS could be spent discussing educational responsibility for any one of the phases of pupil welfare. These might include our responsibility for a character training program, a health program, a program for the care of the underprivileged child, a set-up for the carrying on of vocational guidance. Certainly all of these come under the general topic of pupil welfare.

The recent announcements from the White House Child Welfare Conference inform us that over 3,000,000 children in America require special treatment. Of these 14,400 are blind; 50,000 see partially and should be in sight-saving classes; 342,000 are so hard of hearing they should be taught lip reading; 1,000,000 are so defective in speech that they require treatment; 300,000 are cripples; 382,000 are tuberculous and 850,000 more have a trend toward tuberculosis; 1,000,000 have weak or damaged hearts; 674,000 present serious behavior problems, and 400,000 are mentally retarded. In addition to this, 6,000,000 children are malnourished.

## *An Extra Burden on the School*

Certainly this is a challenge to the school teachers of this country, particularly when it is realized that the only two institutions that contact all of the children of the country are the home and the school. The excellent work that the Boy Scouts, the Y. M. C. A. and the Y. W. C. A. and many other kindred institutions are doing is not to be minimized, but the fact remains that these organizations include in their programs only a selected group and many times do not touch those who need help and guidance the most.

When homes are broken either by divorce or separation, when the love and security so necessary for the development of every child are not present in the home, or when, for any reason, a foster home must be substituted, an extra burden is thrown upon the school along with the challenge to make

adjustments necessary to prevent the development of an antisocial individual.

Much has been said recently about the development of the whole child, and in this respect we have talked about integrating the curriculum and correlating our activities. These things are well worth while, but we have much still to accomplish in regard to the health of the child, his family relationships, his personality and his ability to adjust himself to human relationships that are becoming more and more complex as civilization progresses. The interrelation of these factors, which constitute what we think of as "personality," represents what we call a social or an antisocial being.

## *Survey Reveals Responsibility of Schools*

The responsibility which is placed upon the teacher in promoting these delicate adjustments, particularly in the kindergarten and the first grade, is great. We have reached the point in the progress of the science of education where we are able to do remedial work in the teaching of reading and arithmetic and spelling and geography. When can we expect to reach the same degree of efficiency in doing remedial work with behavior problems, with the predelinquent, the prepsychotic case, the timid child, the unhappy child and the child with habits of inferiority? What is our responsibility with respect to these? This phase of the problem is emphasized in this presentation.

In 1916, the National Committee for the Study of Mental Hygiene, with the cooperation of the New York State Prison Commission, established a psychiatric clinic for a period of two years and examined all prisoners admitted. In 1918, a study was made of the reformatory of New York State, and in 1922, of the county jails. These studies have since been augmented by surveys of the prisoners in thirty states. Of all the adult prisoners examined, two-thirds have careers leading back through the reformatory, the juvenile court, the



juvenile probation offices to maladjustments in the school and in the neighborhood. Do not the revelations of this survey emphasize further the responsibility of our school systems?

The results of these studies have been far-reaching. Realizing the need for some constructive means of adjusting the lives of juveniles while there was still time to prevent them from having a later criminal career, demonstration child guidance clinics were set up in a few of our largest cities. Their work was so successful and the interest of the various communities was so great that at the present time there have been established over 600 public clinics with the purpose of adjusting the lives of potential social maladjustment cases, both juveniles and adults. Almost half of these clinics handle children alone, while most of the rest take both children and adults. This is a remarkable accomplishment when it is remembered that in 1920 this work was unknown and that only seven years have passed since the completion of the committee's study.

With the impetus gained from this work have come the visiting teacher, the psychiatric social worker for children, psychiatrists for children and the school counselors in the elementary schools employed to adjust problem cases.

This article does not advocate an immediate attempt to set up a child guidance clinic in every community. It attempts to define a correct mental set-up on the part of teachers toward the task of adjustment of the problem child. All of us who have been doing this kind of work are firmly convinced that much can be done by the classroom teacher if she will accept the responsibility and take the right attitude. It can best be illustrated by the diagrammatic picture of contrasting attitudes toward the problem child, shown in the accompanying table, which is from Healy's "The Practical Value of the Scientific Study of Juvenile Delinquents," Bulletin No. 96, Government Printing Office, Washington, D. C.

#### *Youth Needs a Guiding Hand*

So long as teachers think only in terms of punishment and of the elimination of pupils instead of considering adjustment and the elimination of causes, so long will there continue to be a continual stream of maladjusted adults resulting from our training. The implications of some of the case studies that have recently been made in our child guidance clinics show definitely that the failure of teachers to condition their children toward school when they are entering, has resulted in continual maladjustment up through the junior and senior high schools and has detracted from the benefits a normal child would receive in school.

It is true that this is not a common occurrence, but recent economic conditions and the growing complexity of our social life have placed tremendous pressure upon our youth and a guiding hand is needed more and more as the temptations and the possibilities of maladjustment become greater. It was not difficult for a boy or girl to fit himself adequately for life twenty-five or thirty years ago, when the moving picture show, the automobile, the radio and changing fashions in family life and morals had but little influence, but new conditions have brought new demands and new conflicts.

#### *Mental Hygiene Is Nothing New*

A child without the proper background and without secure home relationships in which he can have confidence, has little chance to cope successfully with modern civilization, and will compensate for his difficulties by antisocial acts.

There are economic aspects of this situation concerning which the public should be educated. We hear continually of the increasing cost of crime, but until recently there has been little realization that the only real prevention of this cost is to stop crime where crime starts—in childhood. This will not be done by curtailing educational programs and cutting teachers' salaries. If there was ever a time when a full educational program was needed, it is the age in which we are now living.

Mental hygiene is nothing new in the school program, but only recently has its full significance been realized. In a recent article in the *Junior-Senior High School Clearing House*, Dr. Norman Fenton, director, California State Bureau of Juvenile Research, states:

"There are a great many more mental hygiene resources in the schools than are usually realized. For example, there are many teachers and administrators who have studied the subject and are gifted in the application of mental hygiene to the problems of maladjusted pupils even though they often may not be aware that they are applying mental hygiene. Likewise, as previously mentioned, the counselor is becoming commonplace in progressive systems."

Several school systems in this state have set up what they call educational councils to study problem cases as they occur. Although the members may not be highly trained in this work and may lack some of the personnel that a regular clinic would have, they have been successful because they have combined group thinking on a problem and have attacked that problem in an organized way with an idea of determining causes and making adjustments with regard to the full possibilities of the case.

In San Bernardino, every Wednesday morning

### CONTRASTING METHODS OF HANDLING THE PROBLEM CHILD

<i>Unscientific</i>	<i>Scientific</i>
<i>Main Fact of Case Regarded as:</i>	
An offense	An individual who has offended
<i>Consideration of Case</i>	
Limited by determination of fact, nature and degree of offense, with some few representatives concerning the offender	Includes a careful study of the various aspects of the case—physical, mental, social—applying the methods of science or of business where the causes and effects are investigated
<i>Disposal of Case</i>	
Dealing with the affair according to the above determination of offense, but with a limited knowledge of the offender and the cause	Dealing as far as possible with the causes and needs in their relation to the child's future career
<i>Basis of Adjustment</i>	
Theory	Ascertained facts
Concerning how offenders are to be dealt with	Concerning causes and make-up of the individual; the latter being interpreted both as related to cause and to potentialities

at 7:30, the educational council staff meets in the administration building to take up the cases that have been referred. Each member of this group has a full-time job besides his duties on this staff. One member is the elementary school supervisor, another is a member of the research department, the school doctor and the school nurse are included as well as a member of the county probation office staff and the director of special education.

#### *Study Only One Case a Week*

Three classroom teachers prepare the social histories, which cover thoroughly the life of the pupil from the time of birth. A school history is taken from the time the child entered kindergarten or the first grade. A thorough physical examination is given, a mental test, often personality tests, mechanical ability tests, diagnostic subject matter tests are given and many others. If the case has had any previous contact with other agencies this is recorded. If necessary, outsiders are called in as needed. With all this material assembled and reported upon, the case is discussed by the group and recommendations made. The recommendations are carried both to the home and the school. The solution of the case depends upon the combined judgment of the group. The results have been highly satisfactory, not only in the adjustment of many problems, but in the effect they have had on the changing attitude of the teachers and those dealing with these cases. The principal and the teacher concerned are always asked to sit in on these sessions. We study only one case a week.

The group has studied over thirty cases this year. The follow-up reports indicate that in the

majority of cases there has been marked improvement in the problem that brought them to our attention. All kinds of cases have been taken up—behavior problems, nonreaders, speech defects, physical defects, thumbsuckers and many others. No two problems have been alike. All have been different in their causes and have come from different types of homes. Some have come from very poor homes, some from homes of the well-to-do. The range in I. Q. has been from seventy to 124. The treatment has been according to the circumstances in each case and subject to no general rule. The factors which have entered into the case have been surprising indeed to those teachers who have been used to treating symptoms rather than causes, and thinking in terms of elimination rather than treatment.

#### *How One Case Was Handled*

One case will serve to illustrate this point:

Dick was a boy of better than average appearance, fourteen years of age, and in the fifth grade. He was a behavior problem in school, and though he had been to summer school two summers and had one year in a special school, he had never learned to read better than a second grade youngster. The social history found that the mother thought she knew a great deal about psychology. (She had read a book.) She continually excused her son's failing in reading because his father could never read. She talked of this quite freely in front of the boy with the result that the boy took no responsibility for his failure. The mother also persisted in babying him and refused to admit that he was growing up. She was excitable and this

reacted on the boy's behavior. She carefully guarded him from those she regarded as undesirable playmates.

The psychological examination showed that Dick had an I. Q. of 85; a vocabulary age level of twelve years; a comprehension age level of ten years; an average memory; good attention; good imagination, and poor judgment. He was also given Gray's Oral Reading Check tests which indicated the following types of errors: nonrecognition of individual words; gross mispronunciation and partial mispronunciation of words; insertion of letters; omitted syllables and substitutions in some cases; confused vowels and rearranged letters.

On a Stenquist Mechanical Aptitude test he rated the 98th percentile. (On the average only two persons out of a hundred at his age rate higher.)

A psychiatric examination showed no pathology. The physical examination was negative except that the boy was somewhat underweight.

The school history showed that he excelled in art and was greatly interested in the social studies, but that he had a short attention span. He was completely lacking in self-assurance.

His attendance had been regular and his play interests were normal.

#### *The Results Are Lasting*

The staff recommended concentrated social work on the mother to overcome the difficulties found there. Specific instructions were given his teacher on how to overcome his reading difficulties and materials were supplied to help her. His mechanical ability was capitalized in this respect. Both his teacher and his mother were advised to praise his work continually. Six months after this case was taken up by the group, Dick's behavior difficulties almost vanished and a reading test given recently gave him a reading grade placement of 4.5, a marked improvement. The mother is still somewhat unreasonable with him at times, and Dick occasionally reverts to his old habits, but the results have more than compensated for the time and efforts of the staff.

This system is not presented as a panacea for all the ills of childhood. Not all cases can be so treated, but I believe that the method here described has a tremendous advantage over old hit-and-miss methods and that it does eliminate guesswork to a large degree and that its results are lasting and attack the problem both from the standpoint of prevention and cure, for by curing less serious maladjustments we may prevent the more complicated ones of adult life.

No one phase of a child's existence can be considered as something apart. We must consider his whole development, his health, his school work, and

his home life, and the effect of each upon the other in order to paint a true picture. Only by pooling their efforts and attacking their problem together can those who have investigated different fields and factors which contribute to the making up of personality, bring a tremendous amount of information and constructive measures to bear upon a child. The psychiatrist, the doctor, the psychologist and the social worker are an ideal group, but almost every community can, to some extent, bring the knowledge and talents of different persons together to accomplish almost the same results. Particularly is this true since our teacher training institutions offer training along so many lines, and equip the young teacher with a knowledge of what has been accomplished in these different fields.

### Typewriter Improves Pupil Morale, Investigation Shows

In the judgment of teachers who participated in a study on the value of the typewriter in elementary schools, the effects of the typewriter were not confined merely to an interest in the activity for itself, according to Dr. Ben D. Wood, Columbia University, and Dr. Frank N. Freeman, University of Chicago, who conducted the tests.

Children often seemed to be influenced in more fundamental ways. The success which pupils achieved with the help of the machine improved their general mental outlook and rendered them more hopeful and confident. Many teachers referred to greater alertness, more initiative, and more obvious satisfaction obtained by pupils from the kinds of work which the machine makes possible. Perhaps the typewriter has a contribution to make to the development of well balanced personalities, an outcome which educators are beginning to consider basically important.

### Personal Letters in Place of Grade Cards

A new system of reports in the primary grades has been instituted at Helena, Mont. Under the new system pupils in the first three grades will not be given report cards as heretofore. If a pupil is not making satisfactory progress a personal letter from the teacher or the principal, or both, will inform the pupil's parents of the fact and advise the proper readjustment.

The advantages of the new plan were explained by R. O. Evans, superintendent, in a letter to the parents. Among these is the elimination of disturbing comparisons of grade cards.



# Methods Used in Determining Room Size in High Schools

*Three new high schools that have stood the test of service are described. Many novel features are incorporated in the buildings, and over 50 per cent of the floor space is devoted to educational purposes*

By G. E. IRONS, Educational Planning Engineer, Board of Education, Cleveland

**A**N UNUSUAL event in the progress of public education in Cleveland was the simultaneous opening for service of three new high schools in February, 1932.

John Marshall High School, the largest, houses 1,850 pupils. The opening of this school has remedied a condition of serious overcrowding in a small 400-pupil building, with eleven portable rooms in its rear yard. The new school houses the seventh to twelfth grade pupils from an outlying area of nearly eight square miles.

The new James Ford Rhodes School provides high school facilities for a smaller area, known as South Brooklyn, from which high school pupils formerly traveled several miles to an overcrowded high school in the oldest part of Cleveland's west side. The Rhodes school has a normal capacity of about 1,450 pupils. It is now housing pupils in Grades 8A to 12A, inclusive.

The new South High School, with a normal capacity of about 1,400, provides much needed relief to one of the older sections of the city. The old

South High School with its two additions and a half-dozen portables in its yard, had been struggling for years with a growing enrollment of junior and senior high school pupils, aggregating nearly 150 per cent of its normal capacity. The new building is used for senior high school pupils only, while the old building, renamed the Albert Bushnell Hart School, is used for the junior high school pupils of the community.

The three new buildings in their educational planning and arrangement of rooms represent many novel departures from previous customs. Perhaps the most outstanding departure from the practice of recent years in Cleveland is the location of the auditoriums and gymnasiums. Formerly these were placed in the central portion of the building; in the new schools they are separate wings at the ends of the structures. Each of these units has its independent entrances and exits and each may be entirely separated, by steel gates, from the remainder of the building.

Two of these buildings are designed to accom-

*The new James Ford Rhodes High School, Cleveland, is an E-shaped building, with a normal capacity of about 1,450 pupils. It serves both junior and senior high school pupils.*





*In each of the new schools the gymnasiums are separate wings at the ends of the structures. This is the gymnasium entrance at James Ford Rhodes High School.*

modate 2,500 or more pupils when enlarged to full size. The floor plans of the buildings were arranged to facilitate future expansion.

The two gymnasiums in the John Marshall High School will be adequate even when the structure is enlarged. The playing floors are 60 by 75 feet, and 40 by 60 feet, respectively. The larger gymnasium has a sloping balcony on one side and a flat balcony with provision for portable bleachers on the opposite side. More than 500 spectators can be seated comfortably. With the bleachers removed, the flat balcony affords extra gymnasium space for various purposes. The smaller gymnasium has no balconies.

The space under the permanent balcony in the main gymnasium, plus the area under the public entrance lobby, is occupied by the boys' locker and shower rooms, and the girls' rooms occupy the similar space under the flat top balcony and adjacent service rooms on the opposite side of the larger gymnasium, with access to either the large or the small gymnasium.

A distinct innovation in the girls' locker rooms is found in the use of the unit, or "runway" type

of shower room, exactly the same as that of the boys. In these showers the pupils "run the gauntlet" with shoulder-height showers on each side, graduated in temperature from hot water to cold water.

In addition three of the private stall type of showers are provided to afford privacy to girls unwilling to join the others in passing through the unit shower. With this arrangement rapid bathing of a large class is possible.

The auditorium at John Marshall school seats 950 persons, including seats placed in a balcony at the rear. The stage is of adequate size for dramatic productions, with comfortable dressing rooms, plenty of storage space and an orchestra pit. The balcony may be used separately for visual education by dropping a screen above the balcony railing and using the projectors from the booth at the rear.

The John Marshall school may be used as an example of the methods and principles followed in planning all three of the new schools.

In arranging the layout of the rooms, the principle was followed of placing the rooms having a high concentration of pupils on the second floor (classrooms, study halls, library and lunchroom-study hall). The shops for the boys and girls are on the first floor, and the science and art rooms are on the third floor. A music room for band and orchestra practice is in a tower space above the third floor. The chorus music is accommodated elsewhere. In the new South High School all of the music activities are centered in a unit adjacent to the auditorium stage.

The lunchroom unit is planned for quick service and maximum convenience. The main lunchroom seats about 550 pupils at one time. The teachers' lunchroom is separate and has its own service counter. This increases the capital outlay, but decreases the service costs in operation, according to lunchroom authorities. A separate service counter for teachers is provided only in the larger schools, however.

*The main entrance of James Ford Rhodes High School is shown in this picture. It is typical of the design that has been employed in the other two schools.*

The five boys' shops on the first floor have connecting doors and are grouped conveniently about one shop lecture room. Particular attention was given to the details of storage and tool rooms and a "finishing" room with ample daylight.

The shop subjects provided for in the 1,850-pupil John Marshall High School are mechanical drawing, simple mechanics and elementary woodworking, advanced woodworking, millroom, metalworking and printing.

For the girls the home economics section provides two cooking rooms, one for thirty-six pupils and one for thirty-two pupils, and two sewing rooms of the same respective sizes. In the other new schools the number of shops is in accordance with the smaller enrollment capacity of the buildings.

A rather novel arrangement for a multipurpose room is found in the so-called dramatics and social room on the first floor. This is placed between a cooking and a sewing room, with folding doors adjacent to the latter. A small stage platform is included at the end next to the cooking room. This special room may be used variously for visual education, for public speaking, for dramatizations or for club purposes. By opening the folding doors and pushing back the sewing tables, a fairly large room is provided for club programs or parties after school hours. Luncheons may be served from the adjoining cooking room so that a separate kitchenette is unnecessary. This room may also be made to serve some of the uses of the so-called social room now coming into favor for developing the social graces. Its location is not ideal for this purpose, as it is not convenient to the office of the dean of girls. However, a separate room with elaborate outfitting was considered to be too costly.

Without attempting to give details of a rather long and arduous procedure, it may be said that the methods used in determining the distribution and sizes of the educational rooms were based upon existing situations in similar high schools



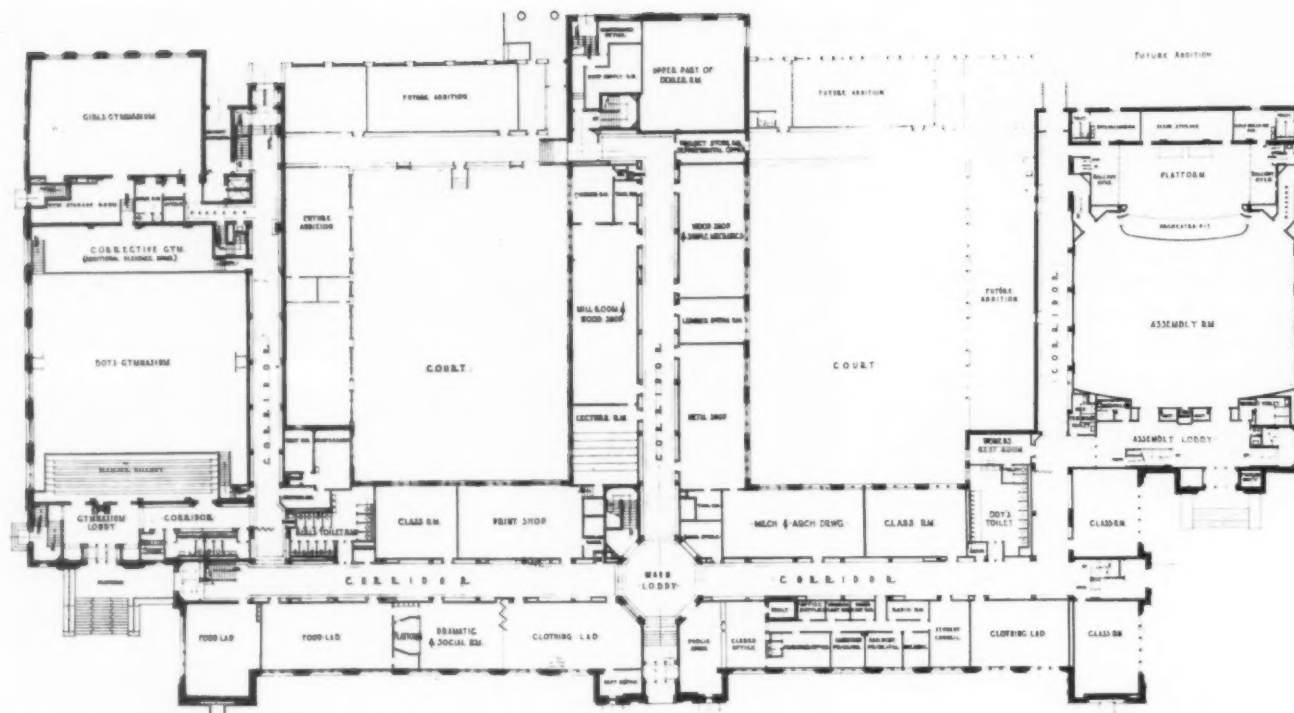
in Cleveland and those expected to exist in the new high schools.

By starting with citywide averages of enrollments and teaching time in the various subjects, and then proceeding to weight the averages in accordance with special conditions found in a specific academic high school and similar to those likely to be found in the new schools, we arrived at a result satisfactory to all concerned. It provides for the transition, if necessary, through three stages of building, from a 1,450-pupil size to a 2,500-pupil size. In actual service the capacities of these schools may reach a figure 10 per cent higher than the normal capacities given, before any overcrowding begins to be felt.

The transition from one size of building to a larger one may be accomplished in a gradual way and with little necessity for the relocation of activities which would involve future expense. In a few cases the uses of rooms will be changed where nothing is involved except a reseating or rearrangement of equipment in the room.

The new South High School was not planned as the first unit of a larger building. This school





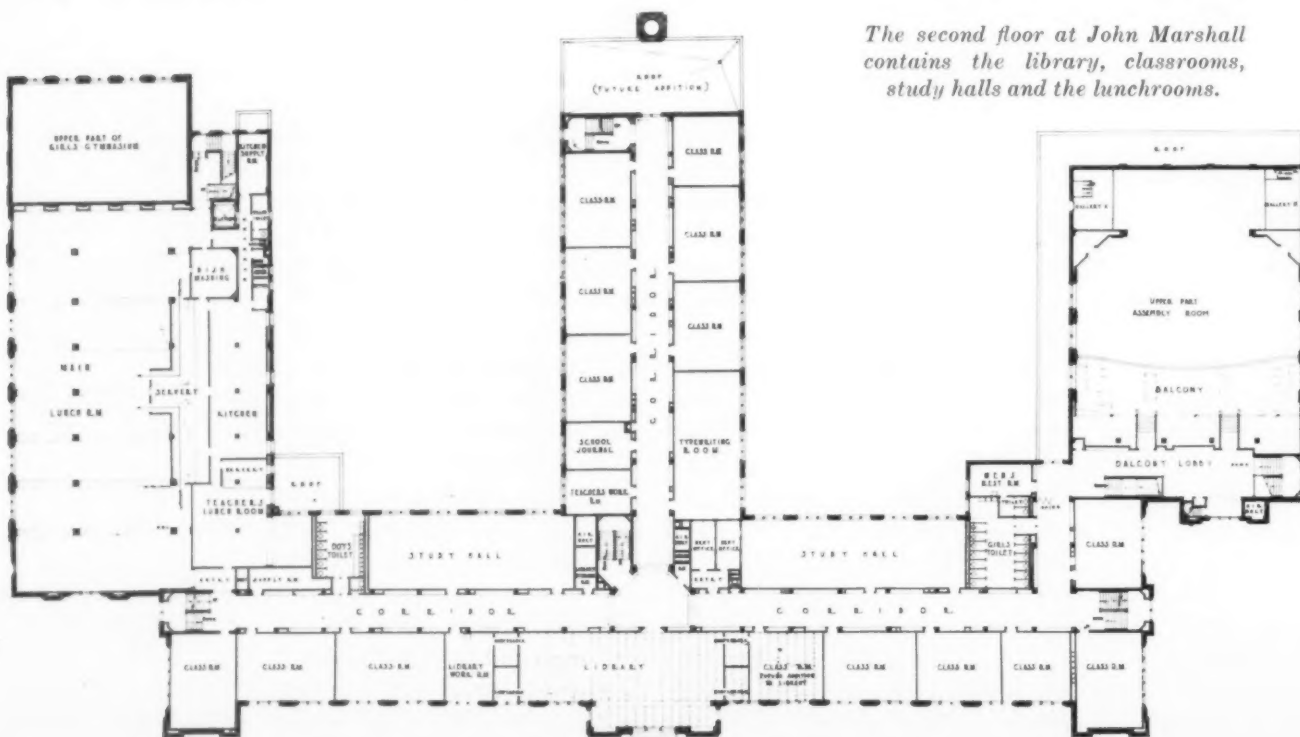
Note the provision that has been made for future expansion in this plan of the first floor of John Marshall High School.

is in an older neighborhood whose future is problematical, and only the senior high school grades are accommodated. Therefore, the South High School building was planned as a complete unit, with a distribution of rooms appropriate to the senior high school curriculum.

According to the N. E. A. "Candle of Efficiency," not less than 50 per cent of the total floor area should be devoted to educational uses. The E-shaped building did not show up well in the

N. E. A. study, which stated that all plans of this type tabulated showed less than 50 per cent of total floor area available for instruction.

Calculating the floor areas of the John Marshall school according to the suggestions made in the N. E. A. study, it was discovered that the building works out to 53.1 per cent of total floor area available for educational purposes. When the building is enlarged to its final size, the percentage will be somewhat higher, because the area for ad-



The second floor at John Marshall contains the library, classrooms, study halls and the lunchrooms.

ministration, toilets and service will not have to be increased.

The new South High School is supposed to be a complete building and is U-shaped instead of E-shaped. In this plan the educational area amounts to only 50 per cent. This is probably because the school is considerably smaller in capacity and more space is necessary, relatively, to provide for administrative and service functions.

### Convenience and Flexibility Provided

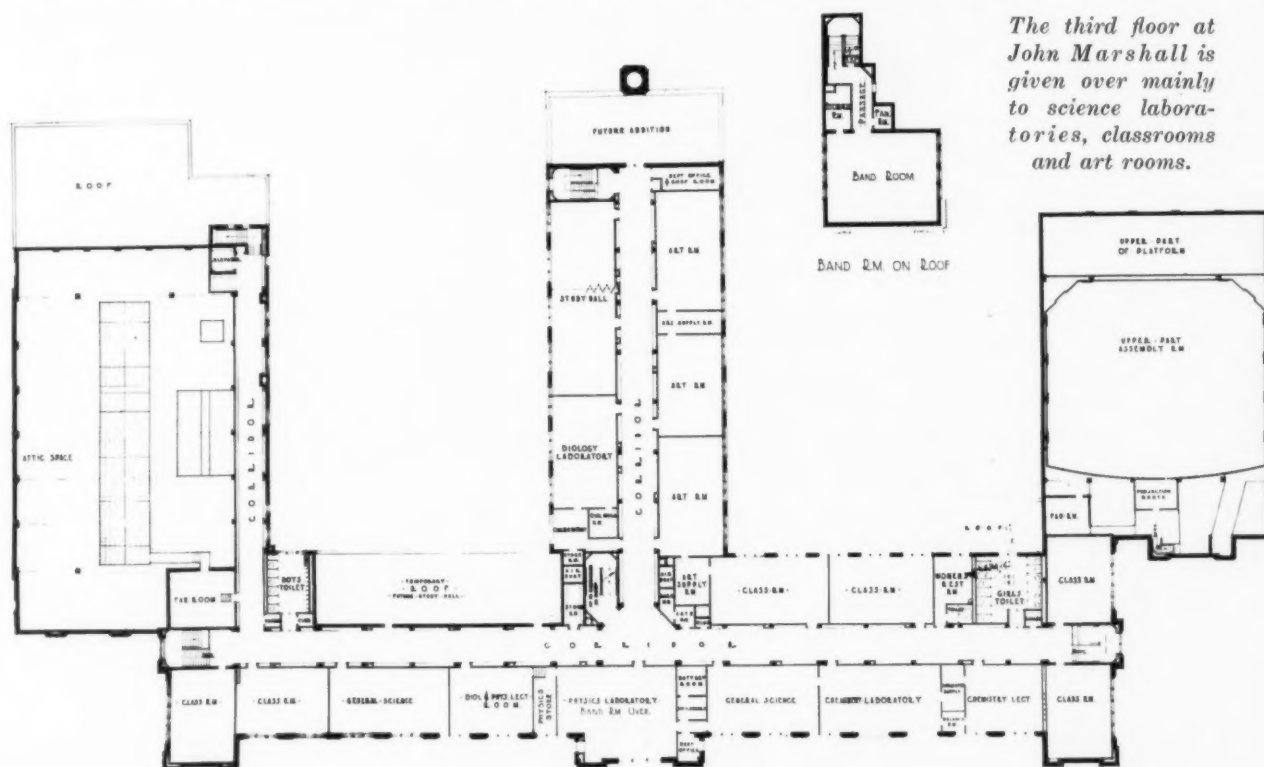
The rules for figuring educational areas have been strictly interpreted. No offices have been included, not even the student council office.

These high school buildings were planned with

cubage from the original plan without any sacrifice of educational floor space.

Another factor in lowering costs through reduction in cubage was the decision, made after several years of debate, to adopt the unit type of room ventilation in the new schools. This enabled the architect to reduce the corridor walls from 30 inches thickness (hollow) to 18 inches thickness, including locker space and breathing space for room exhausts. Large areas of fan rooms, and of concrete and metal air ducts were eliminated.

The test of a good school building comes after it is in use, particularly if it is well filled or even crowded because of temporary conditions. All three of these new Cleveland high schools were



first thought being given to maximum convenience and flexibility, so that administrators, teachers and pupils should have every facility necessary for good work in accordance with the Cleveland curriculum of studies. The needs of the community were also completely provided for, without interference with the main parts of the school buildings. Nevertheless these buildings meet the standards of 50 per cent or more of space for educational purposes, even in a partially completed state.

This result was attained through careful planning of floor areas within the general limits of the plan scheme evolved by the architect, George M. Hopkins, and approved by the superintendent of schools and the board of education. In fact, it was found possible to eliminate large blocks of

filled to normal capacity, or better, during their first semester of operation. The principals of the three schools seem well pleased with the general arrangement and distribution of the various rooms.

Proper proportioning of specialized rooms to classrooms has given ease of scheduling and a possibility of greater pupil capacity, without hardship or strain in any department.

## Economy in Construction Is Today's Need

There is some difference of opinion, however, as to the advisability of graduating classroom sizes into four groups, which was done in the John Marshall school because it was planned to accommodate both junior and senior high school pupils, and the average class size in the former is larger than that in the latter group. This method undoubtedly





# Supervision—Its Scope, Purpose and Accomplishments

*The main purpose of supervision is to provide better conditions for learning by diagnosing the problem and preparing and executing a definite plan*

By J. M. GWINN, Superintendent of Schools, San Francisco

HOW many purposes has supervision? The answer to this question is analogous to the answer to the question, How many branches has a tree? If you cut through the tree where the trunk comes from the ground there is one branch; a little higher where the great branches come out there are three or five or more; if, however, you follow to the ends of all the tiny branches there are hundreds. Supervision has many specific purposes, all of which when referred to their origin are implicit in its one main purpose—to provide better conditions for learning.

It is futile to attempt to draw a line between administration and supervision and I shall therefore include under supervision some things others would probably allocate to administration. Structural lines fade in the field of purposes. Some others might say that the purpose of supervision is to improve teaching. I would agree, but this is not its fundamental purpose, since the purpose of teaching is learning. Those who believe that the purpose of supervision is to provide better conditions for teaching would no doubt admit that this better teaching is for better learning. I can readily approve the point of view of those who consider supervision as being related to teaching. It is necessary, however, in order to be specific, to climb a little higher up the tree with which I have compared supervision. The real fruit grows far up and out on the branches. However, to improve the fruit we must do something down around the roots of the main trunk provided we do not ultimately hope to develop an entirely new tree with branches bearing a finer fruit.

## *How to Improve Learning Conditions*

There are other analogies between supervision and a tree that might be helpful to pursue. There are similarities between what must be done to a tree to provide better conditions for the production of more and better fruit and what must be done

to provide conditions for more and better learning. While the fruit grows high up on the tree the orchardist spends most of his time, energy and money in cultivating the ground around the base of the tree. It is true that he prunes and sprays the branches, but both of these are negative processes and although both are necessary neither contributes the elements that produce the fruit. In supervision it is necessary also to cultivate, irrigate, fertilize, prune and disinfect. Irrigation, fertilization and cultivation are needed to supply the learning situation with the necessary elements and stimulation. Pruning and disinfecting are necessary in order to eliminate those things that take attention, time and energy from learning, weaken its purpose and tend to replace good fruit with thorns.

## *The Three Main Purposes*

In providing better conditions for learning, supervision has but three main purposes, (1) to diagnose the learning situation, (2) to write a prescription, that is, make a definite plan, and (3) to administer the prescription, or execute the plan.

These three purposes are large, and each one of them covers much ground.

The first purpose of the supervisor, to diagnose or interpret the learning situation, may require inspection, research, surveys and all the activities necessary for him to gain a complete understanding of the learning situation. The supervisor, therefore, must have a sound philosophy of education and must be able to analyze the facts of the learning situation in terms of the future.

These include facts about the training, the skill, the aims, the purposes, the philosophy, the health and the energy of the teacher. There are also important facts to be learned concerning the pupil, such as his abilities, his achievements, his environment, his habits and his interests. The supervisor must also be familiar with the facts concerning

the curriculum, the textbooks, the supplementary books, the library books, and the materials needed in learning. He must be thoroughly familiar with the operation of the school as a whole, including the work of the principal.

In securing and in interpreting the facts the supervisor may require the assistance of the teacher, the principal, the research specialist and others. The wise supervisor will study his problem carefully in order to determine the best methods to employ in diagnosing the learning situation in his city. It is important that the facts be thoroughly understood before a plan of treatment is presented.

The second main purpose of the supervisor is to develop a definite plan for improving the learning situation. This plan will be determined by the facts already found and interpreted. It is imperative that the plan developed by a particular supervisor should not conflict with the aims and purposes of other supervision, and it is equally important that the plan conform to the requirements of education in the broader sense. The maker of a plan must be a broadly educated person who has had a wide experience. He must not be so narrowly specialized that he cannot understand educational problems outside of his own particular field.

#### *Features of the Plan*

The plan may include any or all of the following features:

1. To make the physical situation more conducive to learning. Learning is influenced by ventilation, illumination, temperature, seating, sound, space, time and other matters affecting the physical environment of the pupil.

2. To provide the educational supplies needed by the pupil, such as books, pencils, paper, apparatus, and other similar items.

3. To educate and train the teacher. To accomplish this requires giving guidance and help through demonstration teaching, discussion, plan making and courses in whatever the teacher needs.

4. To make a course of study and a program of work for the teacher and the pupils adapted to their needs.

5. To teach the teacher how to diagnose her teaching situation under a plan similar to that already considered.

The third main purpose of the supervisor is to execute the plan that has been adopted for improving the learning situation. This involves situation-making favorable to good teaching and learning, checking and evaluating results, approving and disapproving of the results. The checking and evaluating merge into the activities in supervision.

The purpose of supervision is to provide better conditions for learning. This is done by finding the facts of the learning situation, by developing a definite plan based on these facts and the supervisor's philosophy of education, and, finally, the execution of the plan and testing its success.

### The School Safety Patrol

The operation of the school safety patrol is described by Florence Gilroy, department of attendance, Newark, N. J., school system.

Membership in the patrol has increased from 350 boys in 1916 to 1,670 boys and girls representing the Newark schools at the present time. The members are vested with the responsibility of guarding human lives at dangerous traffic intersections.

To be eligible for the safety patrol, pupils must be in the sixth, seventh or eighth grade, and must obtain the written consent of their parents. Principals usually select for membership in the organization those pupils who show some evidence of leadership or special aptitude in the service of others.

Each patrol has its own chief. Patrol boys and girls are not permitted to direct traffic. Their job is to hold children on the curb until it is safe to cross the street. The patrol members arrive at their posts between 8:00 and 8:20 a.m., where they remain until school has assembled. The patrol members then form their own lines and march to their respective classrooms. The patrol members are dismissed from class two minutes early so that they may get to their posts ahead of the other pupils. The members return to their posts from lunch between 12 and 12:30 and the morning routine is followed. Not more than twelve minutes of school time is lost daily by a safety patrol member.

The patrol members are rewarded for their services with theater parties, medals and sometimes gold watches. These rewards are contributed by various clubs and private citizens. Schoolmates help sustain interest in the patrol by painting posters illustrating the work of the organization. The teachers and principals spur the patrol members on with words of praise and encouragement.

The records of the National Safety Council indicate that safety education in the schools is producing splendid results. In the period 1922 to 1928, accidental deaths among children under fifteen years of age increased only one-sixth of one per cent. During the same period accidental deaths among adults increased 32 per cent.

# The School's Rôle in the New Era Is Theme for Convention

*Business leaders and economists as well as educators will participate in the program that has been prepared for the meeting of the Department of Superintendence*

By MILTON C. POTTER, President, Department of Superintendence of the National Education Association

"**N**EW Frontiers for American Life" is to be the theme for the 1933 convention of the Department of Superintendence of the N. E. A., to be held in Minneapolis, February 26 to March 2.

What more appropriate theme could be chosen at a time when all the world suddenly realizes that it is face to face with new frontiers in its economic, political and social life? New conditions have brought with them new problems and new demands in all walks of life. Perhaps never in America have we been so conscious, so solicitous or so confident that in our hands and hearts lie the material and spiritual elements from which a newer and better future shall be builded. If to the schools of yesterday may be charged some portion of today's ills, our faith assures us that the boys

and girls of today are going out better and better equipped for the responsibilities to be laid upon their sturdy shoulders.

The history of America has been a history of frontiers. It is the story of the gradual pushing back of old boundaries and the creating of new ones, both in material and cultural life, to the end that a continent has been conquered and a new nation evolved, new in concept, new in motive and new in a vast accumulation of problems that must be solved if the American culture era is to fulfill itself in the American culture area.

While the early frontiers were essentially material in nature, and while the motives behind the movement of the people had largely to do with the immediate present, making a living, the attainment of wealth or the escape from intolerable economic



*St. Olaf's Choir, which ranks as one of the most perfect ensembles in this country, will give a special concert for the convention delegates.*



conditions, the frontier to be conquered today is the problem of providing life and happiness for the people who have achieved their material goals.

The physical frontiers no longer exist. The geographical frontiers are no more. We stand now before a new frontier. It may prove more vital in relation to the happiness of a people than any of the old frontiers. It will require a struggle to conquer it, not a flight from or a revolution against established order, but a mighty effort by the ordinary man to hold fast to the rights of life, liberty and the pursuit of happiness vouchsafed to him in the past. It is in essence a spiritual frontier, one that presents a challenge to all Americans to strive



*Milton C. Potter, president of the Department.*

for the attainment of a better, richer and happier life for American citizens.

From the beginning of our history we have been faced with educational frontiers as well as physical frontiers. With the frontier life there went a deep love and respect for freedom as a right, for future happiness as a certainty and for participation by the masses in the management of affairs. Scorn for old procedures and old material in schools was the common expression of this attitude. The schools, with an organization unadapted to local conditions, emphasized nearly always the things and thoughts of the older communities. They were animated by the rather inarticulate idealism of a whole people but were bookish and

retrospective in their aims. It was the school itself that counted; little thought was given to its purpose or to the development of a forward-looking institution. When the school was once organized and the schoolhouse built little thought was given to the exact purpose it might serve. In every state were numbers of public schools, organized into a state system in various forms but alike in their bookishness. All served the past and tried to adapt their charges to past conditions. Many dimly realized that their schooling was not education. Few fully realized how profoundly educational was the frontier life outside the schools.

We have today a vast system of schools such as no other nation can boast. It consumes one-fifth of our governmental expenditures. Schooling is provided at public expense for all children of school age and for many who are not of school age. Yet the question arises whether it is generally organized in terms of American ideals and a changing point of view, or is still in the mood of those wistful expatriates from a settled society who brought it to a new environment.

#### *A Challenge for Educational Planners*

We must redirect our thinking in terms of social objectives, giving serious consideration to the economic, political and industrial order. First things must come first. In the general scheme of things we can no longer successfully study conditions as isolated puzzles, a series of unrelated parts. They must be considered in relation to the whole and what may constitute the whole for years to come. The physical frontier's profoundly educational function was the punishment of passivity and the promotion of adaptability. A consciously planned device must take its place.

To this the school (if it is not indeed the whole device) must contribute its full share. In American education the new frontier means a new synthesis of ideals; the putting together of the great results of the frontier days and the reassembling of them in a pattern that considers new world conditions and embodies an appreciation of true values; readiness for many fields and complete mastery of one; adaptability, cooperation, socialization, seeing things in the large; directing our individual effort to group attainment with full consciousness that the individual cannot thrive long except as the group thrives. This challenge for educational planning is more enticing, more baffling than any that as a people we have heretofore attempted. The new position is one of organization. It is the redirecting of our thought and energy because the frontier has vanished. It is the problem of education in America to put its house in order and to develop objectives and procedures that will secure

results in our time commensurate with those produced in frontier conditions by the whelps of the border who, faced with the problem of quick adaptation or death, revealed mental and physical adaptability, a flexibility of character, that enabled them to dominate both the new environment and old traditions. The twentieth century American school is the expensive but indispensable substitute for the vanished frontier.

The schools in America are today passing through one of the most severe crises of their entire history. The crisis has followed on the heels of a baneful business paralysis which in addition to having a pronounced effect on our educational system is producing dangerous tremors in our whole economic, political and social structure. The committee in charge of the Minneapolis meeting has endeavored to provide a program which not only seeks a solution of the present trying educational situation but which is deeply concerned with the future. It has sought to prepare a program that conceives the function of education to be not so much one of adaptation to present conditions as one that will develop in the youth of America a high degree of adaptability, in order that they as individuals and society as a whole may be better fitted to face whatever economic, social and political conditions may present themselves in the future.

First among the problems the convention program will attack is that of making an analysis of the new frontiers with a view to discovering the essence of our educational problems. To this end business leaders, economists and students of world affairs as well as educators have been invited to appear on the earlier programs of the convention. Second, the program aims not only to reveal the various educational problems in general but to discover their application at various levels of the educational ladder. Finally, it seeks to learn the solutions that thinkers in various divisions of the educational firmament may have to offer.

The program will open with a review of the exhibits by the president and officers of the Department of Superintendence on Saturday afternoon. The Sunday activities will be limited to a consideration of the spiritual aspects of the convention.

#### *Famous Choir Will Sing*

An unusual treat will be afforded convention delegates on Sunday afternoon at the University of Minnesota auditorium in the form of a concert by the celebrated St. Olaf's Choir.

The first general session will be held in the Minneapolis auditorium on Monday morning. The theme of this opening session will be "The Challenge to Democracy in Our New Frontier." Two general sessions will be held on Monday afternoon.

Section A will be devoted to a discussion of "An Educational Philosophy for Our Advancing Frontiers." Section B will have as its subject "The Training of Teachers for the New Order." The evening general session on Monday has been set aside for a consideration of "Educational Frontiers From an International Viewpoint."

Tuesday's program will open with a general session at which time the new 1933 "Yearbook on Educational Leadership" will be presented. The meeting will close with a business session, when reports of the committee on lay relations will be presented and new officers will be nominated.

On Tuesday afternoon there will be discussion



*Carroll R. Reed, superintendent of schools, Minneapolis.*

groups dealing with various types of teaching and administrative problems, including emergency economics in school administration, business administration of schools, the relation of the schools to other governmental units, adapting schools to individual needs, character education, citizenship training, progressive education, secondary education. There will be a section for county superintendents.

The Tuesday evening program will have as its topic "The Administration of Education on the New Frontiers." Speakers will direct their efforts to a discussion of some of the major administrative problems with which education is now faced. This program will probably be followed with more in-

tense interest by city superintendents than any other program of the entire convention.

The possible contributions of research to the solution of the curriculum and textbook difficulties which superintendents are facing will be brought out at the Wednesday morning general session which is to be a joint meeting of the Department of Superintendence and the American Educational Research Association. The topic for this session will be "The Improvement of Instructional Methods for the New Frontiers."

Wednesday afternoon has been set aside for further group discussion meetings. The groups that will meet on Wednesday afternoon will discuss financing education in larger cities, financing education in smaller cities, meeting the emergency in state school systems, public relations, the administration of the curriculum, elementary education, adult education, education for leisure.

In addition to the usual college reunion dinners on Wednesday evening, the Minneapolis Symphony Orchestra will offer an unusual treat in the form of a special concert, for the convention delegates.



*Sherwood D. Shankland, secretary, Department of Superintendence.*

The concert which will be held at the Minneapolis auditorium is made possible through the generosity of public-spirited citizens of Minneapolis.

Two general sessions will be held on Thursday, the final day of the convention. The subject for dis-

cussion in the morning will be "New Frontiers Beyond the Common Schools." The closing session on Thursday afternoon will have as its topic "The New Frontiers of Extension Education."

Speakers on the general session programs will include Glenn Frank, president, University of Wisconsin; Howard Scott, who was the engineer in charge of the Muscle Shoals Project and who is now directing the gigantic undertaking known as the Energy Survey of North America which is attracting nationwide attention; Lotus Coffman, president, University of Minnesota; Robert M. Hutchins, president, University of Chicago; R. S. Wallace, vice chancellor, University of Sydney, Sydney, Australia; David Lawrence, noted press correspondent; Dr. Boyd H. Bode, Ohio State University; Paul C. Stetson, superintendent of schools, Indianapolis; Dr. William C. Bagley, Columbia University; A. J. Stoddard, superintendent of schools, Providence, R. I.; Edward C. Elliott, president, Purdue University; Dr. Ellwood P. Cubberley, dean, school of education, Leland Stanford University; Dr. George D. Strayer, Columbia University; Dr. B. R. Buckingham, Harvard University; E. C. Hartwell, superintendent of schools, Buffalo, N. Y.; Dr. Thomas H. Briggs, Columbia University; A. L. Threlkeld, superintendent of schools, Denver; Dr. Charles Judd, director, school of education, University of Chicago; Dr. Charles Mayo, Rochester, Minn.; Fred M. Hunter, chancellor, University of Denver; Dorothy Enderis, extension education director, public schools, Milwaukee; William J. Bogan, superintendent of schools, Chicago; Wesley O'Leary, deputy commissioner of education, Trenton, N. J.; Herbert S. Weet, superintendent of schools, Rochester, N. Y., and Dr. Frank N. Freeman, University of Chicago.

#### *Other Groups Will Also Meet*

Departments and allied organizations which will hold meetings in conjunction with the Department of Superintendence either in St. Paul or Minneapolis include the American Association of Teachers' Colleges, the American Educational Research Association, Department of Elementary School Principals, Department of Rural Education, Department of Secondary School Principals, Department of Supervisors and Directors of Instruction, Municipal Normal and Teachers' College Section, National Association of Deans of Women, National Association of High School Inspectors and Supervisors, National Association of Principals of Schools for Girls, National Council of Childhood Education, National Council of Education, National Council of State Superintendents and Commissioners of Education, National Society for the Study of Education.



# How Corrective Physical Education Is Helping These Boys

*A special program to aid boys in overcoming postural and nutritional deficiencies is proving entirely successful in the Alameda High School, Alameda, Calif., as the figures given in this article show*

By CARL HAVEN YOUNG, Physical Education Department, Alameda Public Schools, Alameda, Calif.

CORRECTIVE physical education for boys of the Alameda High School, Alameda, Calif., was started in September, 1930, in a new section built during the previous summer for that purpose. This section consists of a room for postural work, for first aid work and for medical examinations and an adjoining sun room for the undernourished boys, for heart cases and for pupils incipiently tuberculous.

That the work might be started as soon as possible, the most urgent cases only were selected the first semester. Many of the pupils in this group were assigned upon the recommendation of their family physician, while others were observed and recommended by the school nurse and by means of a group examination.

At present pupils in each incoming freshman class are examined for postural defects, for malnutrition or for other physical handicaps, while those participating in competitive athletics are given in addition a complete medical examination by a physician. The findings together with recommendations are recorded on a permanent health record card.

The various types of cases that are brought to attention through these examinations are postural weaknesses, structural defects the care of which is recommended to the family physician, heart conditions that are referred to us for rest or corrective work, flat feet, nutritional disturbances,

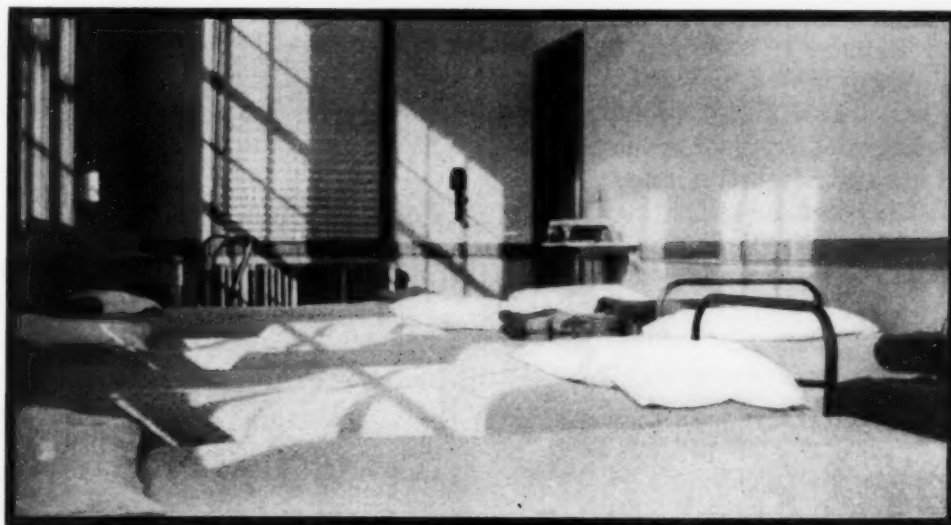
paralytic deformities, defective eye, ear, nose, throat and teeth conditions and underweight.

The procedure for correction consists of individual corrective exercises, recommendations to assist in correcting malnutrition, rest in the sun room and the serving of milk or orange juice to those who need it, as well as the keeping of weight charts.

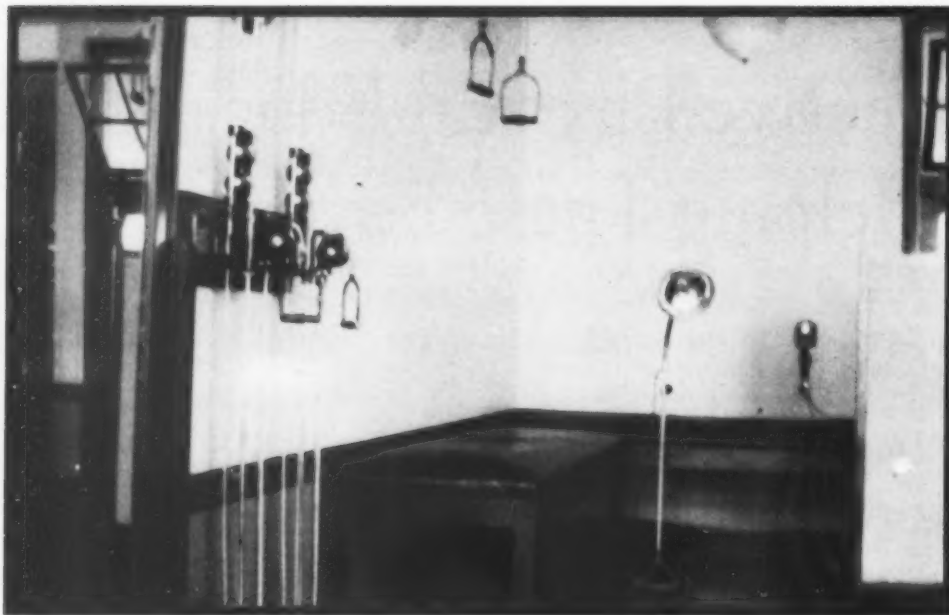
A sincere effort is made to cooperate with the family physician and to lend any possible assistance in preoperative and postoperative cases, as well as in follow-up work of fractures, malnutrition and postural defects. In return for this effort, the medical profession has shown that it is ready to cooperate and assist at all times in the advancement of the school health program.

At the end of the last school year close to 650 individual records were completed. This completed the records of all boys through the junior year in the high school.

In addition, a follow-up examination was made of all juniors. This is in accordance with the plan of two complete check-ups during the four years of high school. By means of the follow-up examination many conditions that had failed to improve



*The sun room, which is equipped with nine cots, cares for fifty-four pupils during the six-period day.*



*The corrective room is proving highly successful in helping boys to overcome postural deficiencies.*

Complete records of 480 examinations made during the first two years of the work are the basis for the data discussed here.

Of the 480 recorded, 109 were 10 per cent or more underweight. The number has been reduced to forty-one. Four cases showed definite signs of

or that have developed since the first examination have come to our notice and have been given attention.

That the individual may be made to feel that he is one of the group taking regular physical education, he must dress for the period in uniform, unless he is tuberculous or otherwise ill. A majority of the postural cases, when they have completed their daily individual work, return for the rest of the period to their regular physical education classes where they participate in games or activities suited to their individual needs and enjoy the spirit of recreation and social contact so important to them in later life.

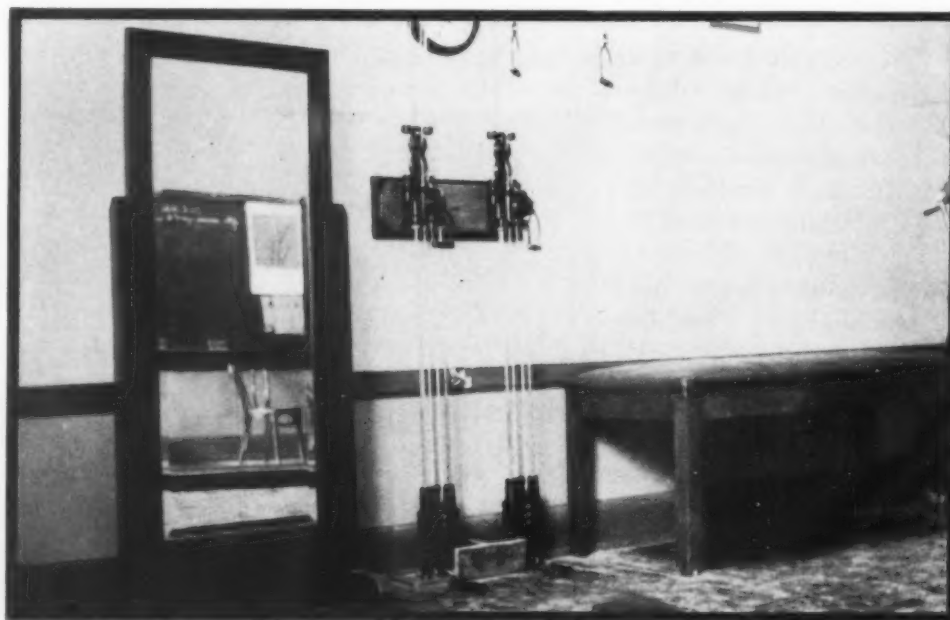
Previous to the beginning of the present program, more than a hundred boys were excused from taking physical education work and were sent to a study hall. At present only one pupil, an epileptic, is excused.

The following data suggest the scope of the work:

There are 1,004 boys enrolled in the high school, 784 being entered in the physical education department and 220 in the R. O. T. C. division.

malnutrition. These have been reduced to two. There are ninety enrolled daily in special physical education classes, forty-one of whom are underweight and thirty-four of whom are taking rest in connection with individual exercises. There are also six heart and three tuberculous cases assigned to the sun room.

Nine cots are available in the sun room and there are six periods a day. Thus fifty-four pupils may rest during the day. Thirty-five are assigned rooms regularly and, with the many emergency sick cases, all of the beds are used to their maximum. The correlations between underweight and postural weakness are evident, and improvement of either condition assists materially in the correction of other deficiencies. With this foundation a more extensive program may be achieved.



*This picture of a section of the corrective room shows a portion of the equipment and apparatus.*

# Educational Publicity and What It Will Accomplish

*To be effective, school publicity must be properly organized and under the direct control of the administrator, whose duty it is to inform the public on school matters*

By CALVIN T. RYAN, State Teachers College, Kearney, Neb.

EDUCATIONAL publicity has existed in the United States from the time of the first school. The first effort to organize publicity came, doubtless, with the report of the selectmen at the New England town meetings, out of which grew, also, the first school reports.

As early as 1738, a Boston committee gave a written report to the town meeting in which was set forth the number of children in each of the schools, as well as the quality of instruction offered.<sup>1</sup> The Massachusetts laws of 1838, 1846, and 1859 made the presentation of written reports on the conduct and condition of the schools compulsory, and the printing of such reports optional, and then compulsory, respectively. Horace Mann says that by 1846, seventy-one cities in Massachusetts were printing their annual reports. He saw the necessity not only of the reports but also their significance for school and educational publicity. Then possibly even more than now it was necessary to gain the good will of the people, to win their interest not only for school support but also for popular education. In his annual reports Horace Mann frequently referred to the advantages of printing school reports. In 1839, he wrote: "To have a copy of them (school reports) in every family is the only efficient way to secure such attention as they deserve, to the important subjects they discuss." In 1841, he wrote: "Though the reading of a report in open town meeting cannot be otherwise than useful; yet the advantages of distributing to every family in town, an able and well written tract on common schools must be indefinitely greater."

Mann, possibly, was unacquainted with school publicity as such, with educational publicity or with public relations as such, nevertheless he had in mind the same thing as the modern public relations expert has in mind when he makes news out of the city superintendent's report, or as the superintendent of the smaller high school has in

mind when he gives out news items concerning his school to call to the attention of every family the conduct and needs of the public schools.

That good will is the chief end to be sought by publicity, with increased enrollment, increased income and the spread of information closely following, was found by Frank R. Elliott to be the opinion of college presidents concerning publicity.<sup>2</sup> Mr. Elliott gave the following excerpts from letters as typifying the attitude of college administrators toward this new phase of educational administration:

"The public should know about the offerings, the offerers, and the general atmosphere, aims and ideals of the institution."

"As a state institution, giving public service with public support, we consider it our duty to give the public information about what we are doing."

## *An Administrative Duty*

What is true of the tax supported college and university is no less true of the tax supported public school.

The practice of publicizing the schools is probably not much more than ten years old, if educational publicity is considered in its present scientifically handled cumulative form. It came into existence through necessity, and existed first as a policy. Superintendents discovered that it pays to advertise, and also that advertising is particularly profitable for those directly in charge of the schools. School officials found it necessary to put on campaigns for special school projects, such as new buildings or increased salaries for teachers, and these campaigns had to be planned and executed in the light of the psychology of handling people. The present trend, however, is away from publicity limited solely to good policy, and is leaning more toward functional publicizing. The idea is old, even though the words are new. In brief, school administrators no longer publicize their



schools solely because it pays to advertise. They organize and control their school publicity because they feel it is one of their administrative duties to give out information to those who support the schools. The older attitude depended largely upon infrequent, direct methods. The present method depends more nearly upon indirect but controlled procedures.

These two attitudes are found side by side in the earliest city school reports. The school committee of Groton, Mass., included the following passage in its report for 1841-42:

"The law of our state makes it the duty of the school committee, annually, to submit a statement of the conditions of our district schools, accompanied with such remarks and suggestions as they may deem proper. We consider this a wholesome provision and fully recognize the wisdom of the statute. By means of such a report . . . the inhabitants of the town are informed of the state of their schools, and their attention is called to their existing defects and to the best method for their improvement."

The school report of Fall River, Mass., for the same year reads:

"Those who are taxed to support public schools have a right to know how their money is expended, and what is the character of the schools which they are required to maintain. The committee are but the agents employed by the town to take the agency of common school education, and the employer ought to be made acquainted with all that appertains to his interests, in respect to this agency. What the committee know as to schools, the town ought to know."

#### *Printed Reports Encouraged in 1855*

State superintendents of public instruction throughout New England encouraged the printing of school reports, and always with the reason that the patrons should know about the schools. These reports were to inform parents of the schools. The commissioner of common schools of Maine said in his report for 1855 that the school committee should not only read its reports at the town meetings, but should have the reports printed and a copy sent to every family, to be read by parents, teachers and scholars. He added that since the school report was usually read at the close of the meeting, after many had gone home, not all persons got to hear it. To have the report printed and circulated would "tend to create a healthy emulation among the parents and scholars of the different districts, as well as increase the amount of reading matter on the subject of schools."

In the light of present high pressure living, with

people having only a small amount of time to devote to free reading, the assumption that school reports would be read voluntarily is almost amusing. We should remember, however, that Americans who lived in the middle of the last century were not so busy as people today. Furthermore, the village mind was not wholly extinct, and the school and the church were institutions of intimate concern to all.

The rise of the historical report is partly responsible for the declining interest of parents in schools. The ordinary statistical school report edited by the average city superintendent is not interesting to the average person. Such reports are intended for the initiated, and for the files.

Another valuable medium of educational publicity is the general magazines, which, since their inception, have portrayed the history of American thought and interest in education, religion, science and politics. Americans have been interested in periodicals since the beginning of the eighteenth century. In 1788, George Washington wrote to Mathew Carey, one of the greatest of the eighteenth century magazine editors, apropos of magazines: "I consider such easy vehicles of knowledge more happily calculated than any other, to preserve the liberty, stimulate the industry and meliorate the morals of an enlightened and free people."<sup>3</sup> This commendation was no political gesture, for we know something of the magazines for which Washington subscribed.

#### *The First Educational Magazine*

Education was a subject discussed in the earliest American general magazines, although in a spasmodic and unscientific manner. Education was not yet a science; pedagogy was in its infancy, even in Europe. Tests and measurements, intelligence quotients, chronological age and the dictionary of modern educational terminology were yet to be formulated. The articles were largely inspirational, frequently critical and derogatory. These discussions, nevertheless, served to keep alive an interest in the subject.

The first educational magazine published in this country was the quarterly *Juvenile Monitor or Educational Magazine*, which appeared in 1811, but did not last out the year.<sup>4</sup> It was published in New York by Albert and John W. Pickett, who conducted a day school and published textbooks. The first really important educational journal was Russell's *Journal of Education*, which appeared in 1826, with the intention of "diffusing enlarged and liberal views of education."

Although magazines devoted exclusively to education appeared late and developed slowly, the general magazines, of which there were many before

the opening of the nineteenth century, devoted considerable space to the discussion of education. In fact, almost all of the more prominent magazines divided their material among education, religion and science or medicine. Noah Webster's the *American Magazine*, which appeared first in December, 1787, devoted much space to education. Webster opposed the use of the Bible in the schools; pleaded for less attention to dead languages and more attention to English; opposed one master teaching many subjects, and advocated electives. His thoughts sound quite modern.

#### A Harsh Statement

The education of women and "female seminaries" were favorite subjects for many magazines of the eighteenth century. Classical education was on the defensive, as we have seen, and many of the arguments used now by those who favor this form of education were in use a hundred years ago. Colleges and college education were under fire. There was a mania for establishing colleges, Brockden Brown wrote, and he added: "Three-fourths of the colleges in the United States have professors wretchedly unqualified for their station." As early as 1829, magazines were using statistics. Magazines of 1829, 1835 and 1853 called attention to the fact that children were not attending the public schools, and they published statistics in proof of this.

Poorly prepared teachers must have been common in those days, for the public schools were criticized on that ground. The following castigation of teachers appeared in the *New York Review* for July, 1838:

"The multitudes (of teachers), at least in some states, are made up of thriftless adventurers of every grade, too lazy to work, too poor to live without it, and much more fit to be peddling wooden nutmegs, or making hickory hams, than to undertake the task of training the youth of a nation to the knowledge and love of their duty as citizens and men."

State school journals began to appear before the middle of the nineteenth century. More than sixty educational publications appeared between 1825 and 1850, but only a dozen or so lasted beyond three years. Most of these publications contained only inspirational or controversial matter. Practical material for the classroom teacher was scarce.

Perhaps our public schools have been and still are controlled in reality by business men and their point of view, rather than by educational theorists and experimenters, nevertheless, discussion has done much to maintain interest in education and to make public schools possible.<sup>5</sup>

So from the time of the New England town meeting to the present, educational publicity has been known in the United States. Organized or unorganized, direct or indirect, publicity is as old as education and older than the republic, older than the public school system itself. And, what is probably more significant, the idea that those invested with the power of controlling the schools owe it to their fellow citizens to keep them informed concerning the conduct of the schools, was the opinion held from the first and is the opinion today of more and more administrators.

When Dr. William H. Todd found that the average American knew only about half what he should know concerning school affairs in order to be able to vote intelligently on school policies and management,<sup>6</sup> he concluded that it was time to slow up on experiments and tell the public about the present status of the schools.

I believe if more attention had been given to interpreting modern education to those supporting it there would not be the present backward step in school support, certainly not the present mania for abandoning progress already made. Interpretive publicity has historical support. High pressure publicity was developed by the propaganda movements that occurred during and subsequent to the World War. And what is more, the methods used frequently smacked of unethical propaganda. They represented a new and fairly successful procedure for getting money. They worked temporarily but left a bad impression on those who succumbed to the sensational method.

#### Daily Contact Is Necessary

Publicity to be effective must be cumulative; it must be organized and controlled. With the present interest in the daily press, with the radio, with the application of psychologic principles to advertising, and with the availability of the school press and the office mimeograph there is no excuse for the administrator who does not maintain a daily contact with his patrons. The inhabitants of the town should be informed of the state of their schools. This information should be given not merely as a matter of policy but as a part of the duty of those who have been selected, because of their special training and education, to supervise common school education. No administrator should leave the publicity of his school to the haphazard methods of newspapers, public gossip and the unread annual report.

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- <sup>2</sup>*Journal of Higher Education*, June, 1932.
- <sup>3</sup>Richardson, Lyon N., *A History of Early American Magazines*, 1931.
- <sup>4</sup>Mott, Frank Luther, *A History of American Magazines*, 1930.
- <sup>5</sup>Counts, George S., *The American Road to Culture*, 1930.
- <sup>6</sup>Todd, William H., *What Citizens Know About Their Schools*.

# Editorials

## A Dangerous Tendency

LESS than a century ago the great struggle to establish free public schools was staged in this country. By 1850 the principle of the public school, tax supported and open to all, was definitely established in all of the Northern states. The South was unfortunately handicapped by the war and the severe burdens created during the reconstruction period. The principle of the free school is the keystone of our democratic educational arch.

A tendency has developed within recent months in several of our public school systems that is retrogressive in concept and exceedingly dangerous in practice, however noble may have been the motive that gave rise to it.

Certain school systems of a progressive type, situated in rather wealthy communities, found themselves faced with the necessity of diminishing effort on account of the period of economic readjustment through which the country is passing. The inability of many persons to meet the heavy burden of property taxes resulted in a large increase in tax delinquency. The obvious requirement was a certain general retrenchment such as other school systems have faced.

These communities also possessed well informed and aggressive parent-teacher associations. For a number of years programs of parental education had been carried on and the fathers and mothers were conscious of the value of the new education. Faced with the necessity for retrenchment, they generously offered to finance part of the program by an extralegal tax on themselves. They agreed to pay certain sums of money to the board of education to supplement the depleted district income. The motives that prompted these parents to make this unusual offering are of the finest type. It would be difficult to praise them too highly or offer the slightest criticism of their action, made during the darkest days of the depression, in face of other losses, to safeguard the children's program.

It is doubtful, however, whether boards of education, executives or parents thought through the possible dangers of their action in contributing directly to school support. From one viewpoint this contribution represents a real tuition or rate payment. Its acceptance by boards of education sets a precedent that is extremely dangerous. The

reestablishment of tuition or rate schools may be comparatively easy if voluntary action by parents is accepted as part of the public thinking of any community. It is likely to become so, since public boards, faced constantly with criticism of tax levies, may decide that an easy solution of their problem is to furnish a minimum of service and tell parents that the residue of what is socially necessary must be paid for through private contributions.

A step like this, justified purely as an emergency measure, creates a precedent that may be taken advantage of to develop an unworthy practice. The immediate danger lies in the general publicity given to the action of the parents and the possibility that it may be imitated. It is possible to see an early return to the rate schools of the first half of the nineteenth century unless such tendencies are nipped in the bud. A return to the rate school would mean that the struggle of the past eighty years for free schools would have to be fought again by the next generation.

The only safe path to follow is to look critically on every emergency suggestion and practice of this type, however tempting it may appear to the worried executive and harassed school board. The parents in each community must insist that the full cost of public education shall continue to be borne by tax levy on all of the people. Any other course is dangerous to the educational welfare of the nation.

## Eliminate Politics

MUCH concern is felt and expressed by leaders in education with respect to the commissionership of education. The advent of a democratic administration and current rumors give color to the idea that the appointment to head the federal office of education is to be made a partisan reward.

The commissioner of education should be chosen not for his political beliefs or for his party efforts but rather on account of his outstanding qualities as a leader in the field of education. The relative importance of this position in the federal executive scheme is small enough and the powers of the office are so circumscribed that its real value lies in the possibilities of leadership influence. The position cannot now render great honor to the man but several individuals have increased its prestige and enhanced its value by their personalities and by their achievements. To make it purely a reward for partisan effort is further to belittle and submerge the office.

To this consideration must also be added the



fact that the tradition of the office is nonpartisan. President Taft appointed as commissioner a democrat who held office for three presidential terms.

Dr. William John Cooper was appointed commissioner four years ago. His choice can hardly be classed as political. His selection was based on his many years of outstanding service to the public schools of California and on the widespread influence of his leadership while executive head of the state department. In his present position he has worked earnestly and ably. The results of his work are just beginning to make themselves felt. We believe that Doctor Cooper has been an effective commissioner and that his value will increase with years of further service. We believe also that a change for purely partisan reasons during the present crisis cannot be helpful to public education. Regardless of political affiliation we believe that Doctor Cooper should be retained.

It might be extremely helpful if those who feel that this educational office, like the schools it represents, should stand above party, expressed themselves through their local representatives and to the new administration.



## The Rural Child

**D**URING a recent institute the teachers in a markedly rural county in California took a vigorous stand in behalf of their rural school pupils. While still feeling the pressure of a certain organized minority of laymen who had lost sight of the welfare of children, the teachers formulated and passed unanimously the following resolutions:

"Be it resolved, that we endorse all practice of economy which will not jeopardize the standards and efficiency of the schools of Siskiyou County."

"Whereas, a great advance of American education has been brought about by the careful supervision exercised in our cities, and whereas, such supervision is needed to a very much greater extent in sparsely settled regions where most of the schools are of the multigrade type, therefore be it resolved, that the county superintendent of schools be requested to extend rather than to reduce the amount of rural supervision furnished."

Only one deduction can be made from the two resolutions passed by the teachers. Rural school supervision is a vital part of any economical educational program devised to provide schooling commensurate with the needs of the children. The plea of the teachers, based upon their understanding of serious educational obligations to the young, is an unselfish request made to the parents in behalf of their own children. The experiences of the

professional group have developed in them a clear vision of one of the birthrights of rural children in a democracy—the right of as good an educational opportunity as progressive cities provide for urban children.

It is the duty of all of us to further the cause of the rural child by championing the reasonable demands of the rural school teacher and by enlightening the public so that it recognizes and meets the unsatisfactory conditions. Intelligent understanding will lead laymen to establish rural school supervision in rural areas where it does not now exist and to extend the amount of supervision where it is only meagerly provided.

Superintendents of schools, teachers, other educational workers and laymen who have kept in intimate touch with school development owe it to rural children to inform others regarding the situation. The army of the informed must impart to others the reasons why in service training of teachers must be provided no matter how thoroughly teacher training institutions have prepared persons for teaching. Supervision of the employed teacher evolved to aid her in meeting the specific obstacles, emergencies and conditions that are more or less unique in her classroom. She needs expert guidance in continually making adjustments to meet the ever changing conditions of life. Progressive developments in education which will benefit her pupils can be learned only in part through courses in extension divisions and summer schools. The teacher may be one of many who for valid reasons cannot avail herself of the opportunities for growth such courses provide, but her children are entitled to benefit by the fruits of such courses through supervisory assistance brought to the teacher.

"What will the supervisor do?" asks the uninformed. From the teachers themselves we obtain the answers. By observation, conference, bulletins and the like, the highly trained and experienced supervisor is able to help each teacher with her many problems. In practically every classroom in rural schools, the teacher needs considerable help in such matters as finding time for supervised study, for keeping children profitably at work while giving attention to others in the class, for maintaining, in fact, a balanced program of learning activities so that each child in the room is given a reasonable share of the teacher's guidance.

The rural school supervisor is needed by the teacher to help her plan wisely in meeting the varied abilities of children enrolled in the same grade, in contending with the retarded progress of some children, in providing for the needs of their brighter classmates and in dealing with a host of similar problems. On the foundation of

professional training provided each teacher by the teacher training institution from which she graduated, the rural school supervisor builds the needed instructional structure which makes the teacher efficient and keeps her competent and up to date. He assists the young beginner in acquiring rapidly skill in classroom techniques which would be otherwise acquired by the trial and error method, the children suffering in the meantime. He assists the older experienced teacher in keeping informed of educational changes.—*Kyte*.

### Banks, Bonds and Georgia Superintendents

**R**EFUSAL of the national bonding companies to furnish bonds for the newly elected county school superintendents in Georgia has brought about a condition that may become highly significant in other states.

On their side the bonding companies show figures which they say prove that their premium income of the past ten years on school superintendent bonds was completely dissipated by losses in 1931-32. Lest anyone jump to a hasty conclusion regarding school superintendents in Georgia, let us hasten to add that these losses were occasioned by school deposits lost through bank failures. This is the crux of the situation. The bonding companies state that they are perfectly willing to bond the superintendents in the conduct of their office, but will not accept the responsibility of guaranteeing the security of bank deposits. They demand that the banks post securities to cover the safety of the school funds. This the banks refuse to do, stating that they cannot afford to tie up so much money. Thus we have an impasse and in the meanwhile the innocent victim is the school superintendent who was supposed to qualify on or before the tenth of January.

Someone might suggest that the solution would be to let the superintendents qualify without bond. This would be fine, except for the fact that the statutes covering school superintendents specifically provide that bond must be made, and in the majority of counties corporate security is required and personal bondsmen are not acceptable.

To meet the immediate situation and pending enactment of emergency legislation, the bonding companies have agreed to take care of reelected superintendents in their present bonding companies under reduced bonds. At the same time the Governor of Georgia has written the governing bodies of the various counties and the school board officials requesting them to permit newly elected

superintendents to qualify under a minimum bond. The bonding companies have agreed to consider each of these new applicants on a basis of individual merit.

At the meeting of the state legislature this month, bills were introduced, the gist of which will be to relieve the school superintendents of responsibility for loss of funds incurred through bank failure, thus in turn relieving their bonding companies.

Should this legislation fail of enactment then the bonding companies state that they will not proceed beyond the minimum bonds which they are now furnishing.

To school superintendents and educational board members everywhere this Georgia situation offers much food for thought. We are informed by a bonding company official that not more than ten states have adequate legislation to cover such a condition and the action in Georgia will probably be followed by similar action in other states.

### A Wise Step

**F**ARSIGHTED school administrators have been considering for some time the obvious overemphasis and absence of relative balance in secondary school competitive athletics. Leaders in health and in physical education have repeatedly called attention to the dangers involved.

One of the serious difficulties has been the rapid development of so-called customer-criticism by which the purchaser of an admission ticket has assumed the right to question boy performance, obviously in comparison with professional effort. So long as the gate receipts form an important part in the financing of essential extraclass athletic activity it is extremely difficult to control this factor. Since this type of financing is apparently much easier for a board of education than to provide for general and intramural athletics by tax appropriations, it seems reasonable to assume that the present methods will continue for a long time.

The action of the St. Louis public schools in meeting this problem fairly and squarely, in recognizing physical activity as a definite and integral part of the curricular program and in eliminating financing through gate receipts is quite refreshing and worthy of commendation. The development of this policy will be watched with interest by school administrators in other communities. Its adoption has great possibilities as one of the steps in the curbing of the championship complex and returning adolescent athletic activity to rational and complete control by the school organization.

# Happy to Say—

By WILLIAM McANDREW

THE flowers planted by teachers in the realm of childhood and youth are miracle plants. Many of them bloom after fifty years. Ask any man of sixty or more.

CHIN LUNG said "It is easy to die, but hard to die at the right time." But this is the right time for a teacher to be alive and you don't know any time when it wasn't.

YOUR own thoughts on any large theme are worth bringing into conversation. You will find them respectable if you don't dampen them with apology. Talk, nowadays, is thin soup steeped out of newspapers. It needs your personal essence and flavor.

COURAGE flavored with good humor is salt on the tail of that spry bird, good luck.

BECAUSE it's too misty to see ahead, don't shut your eyes. Push cautiously out into the fog.

SUCCESS has come to many a man through his skill as a loser.

IT STRIKES me that it would be a mighty good thing for school executives to get a wide reading by their fellow citizens for Professor Moehlman's hot stuff: "The Depression-Demagogue at School," which appears in the December number of the *New Outlook*. It is the right course to address directly the general public through a popular magazine. In his appeal Professor Moehlman cites some facts that an excited people should not be allowed to forget. He makes clear the utter lunacy of taking props from under the bridge over which the country must travel to reach better times.

YOUR friend, Aristotle, remarked "It is possible for every man by certain studies and appropriate care to reach a condition of happiness." Yes, I know, this has never been proved. But, then again, it has never been falsified, and a happy schoolmaster does look like a community asset.

IF YOU know whither you are going, you waste no time puzzling which is the right road.

THIRTY marchers, helped upon their way,  
No grudge maintained for any little teaser,  
Can give to me as near a perfect day  
As had by a Napoleon or Caesar.

IF YOU never had any other work than teaching, you may not realize how lucky you are to be in a service so rich in opportunities for satisfaction and enjoyment. If any of the old foolish lack of affection for your work simmers in you, note this: it's a heap easier to learn to like what you are in than to get into what you think you would like. Who dislikes teaching is likely to be discontented anywhere.

THE statesmen of tomorrow are in your schools today. How much attention for politics can you spare from your dear old algebra, geometry and Latin?

TO BE glad you're alive and worth while is a simple, commendable and attainable form of happiness.

NO USE talking about "the vicious circle." Good work always brings some success, success generates more power; more power asks for more work. That's the circle for you.

SURE! the world is a sphere. Why, then, should I keep on considering it a circular plane with me in the center? Make me read the books of my profession and get some more dimension.

PRAYER for the day: So may I live it as to say at night, "I would have done nothing otherwise."

AN ERROR of supervisors in thinking a teacher more efficient than she is does much less harm than the mistake of thinking a teacher poorer than is the case. But why dodge the standard efficiency tests?

THE speaker who uses the "I" too much is too cross-eyed to see the contempt of the audience.

SELF-REALIZATION comes to a mind buried in work. Self-manifestation is too busy with self to give the work much thought.

SOME of life's happiest moments are those in which you do not think of happiness at all but of the workmanlike job you are doing.

DID you ever know a teacher or anyone to achieve happiness by complaining of unhappiness? Pursuing happiness is like chasing sleep. She won't be caught that way.



## News of the Month

### Atlantic City Meeting Covers Many Educational Topics

The reading of papers, the helpful exchange of experiences and the vigorous challenges of conflicting points of view on matters pertaining to professional education and its specific problems featured the meeting of Section Q of the American Association for the Advancement of Science, held at Atlantic City, N. J., December 27 to 31.

Although the attendance was smaller than usual, a great deal of interest and enthusiasm was displayed by the delegates. Prof. Stuart A. Courtis, University of Michigan, vice president and chairman of Section Q, presided at the sessions. Dean Willis L. Uhl, University of Washington, served as secretary.

The opening session on Tuesday morning was devoted to experimental studies of general educational problems. Papers on "Cooperative Research in Secondary Education," by Prof. E. D. Grizzell, University of Pennsylvania, on "The Determination of a Course in Psychology for High Schools," by Dean L. A. Pechstein, University of Cincinnati, and on "The Period of Service and Its Relation to Tenure in American Liberal Arts College," by Prof. Norman MacD. Grier, Wagner College, Staten Island, N. Y., presented significant facts and views.

#### *Discuss Value of Activity Program*

Considerable discussion followed the reading of a report by L. W. Smith, superintendent of schools, Berkeley, Calif., on "A Quantitative Study of an Activity Program." Mr. Smith showed it is possible, qualitatively at least, to determine the degree to which a new idea is truly functioning within a school system. The report showed that while some teachers are actually putting activity programs into effect in their classrooms with beneficial results, many other teachers are merely adopting, nonunderstandingly, a prevailing style in method, and are camouflaging conventional teacher-direction to make it resemble as nearly as possible an activity program. The discussion of the report ranged from an analysis of the results secured to the pros and cons of an activity program.

The last paper of the morning session, a description of "An Instrument for Measuring Group Discussion and Planning," by J. Wayne Wrightstone, Columbia University, discussed a new technique of observing and recording specific aspects of classroom behavior.

On Tuesday afternoon Charles Morris, New York University, and T. Ernest Newland, Bucknell University, presented evidence of the degree to which the method of selection by college entrance requirements fails to achieve its purpose. Students fully qualified, who nevertheless failed in their freshman work, and students who did not meet the requirements but nevertheless made good, were counted as errors. The percentage of such errors was shown to range from 6 to 31 per cent.

#### *Describes Need of Rural Schools*

Gordon Hendrickson, University of Cincinnati, basing his conclusions on the results of personality tests given to 500 teachers and prospective teachers, expressed the conviction that the distinction between successful and unsuccessful teachers could not be made by such tests. Professor Grier detailed some of the pitfalls in the work of accrediting agencies with respect to scientific laboratories.

Prof. Arthur B. Moehlman, University of Michigan, reviewed the progress of educational research in public school work, and pointed out the limited extent to which practical principles and techniques have reached the small town and rural system. He appealed for more effort to express fundamental ideas in nontechnical language that could be understood by persons not having extensive training.

A paper by Theresa Durlack, Columbia University, on "The Need of Mass Education and Social Sciences," aroused the most vigorous discussion of the meeting. Miss Durlack advocated the study and use of methods of commercial advertisers to secure public approval of important educational ideas. The protests against her implied program of propaganda rivaled the approval of the general idea of more adequate methods of contributing to the formation of dynamic public opinion.

The Wednesday morning program was one of unusual excellence. Prof. Walter H. Magill, University of Pennsylvania, presented an analytical study of the relative value of three forms of the new type of examinations covering the same sub-

## News of the Month (Cont'd)

ject matter. The paper brought out many expressions of approval of the effort to evaluate the test instruments themselves. Dr. J. B. Maller, institute of school experimentation, Teachers College, Columbia University, reported on a district study made in New York City on the relation of psychological and social-economic factors to educational achievement. The correspondence between the averages of the various districts for such factors and their relative school achievement was marked, the report showed.

### *Interesting Symposium Held on Wednesday*

Willis L. Uhl reported on "An Experimental Study of Typewriting With a New Keyboard." The new keyboard is designed to minimize the movements and conflicts between fingers, and to distribute the load between the two hands. Motion pictures were shown of the hands of operators in order to illustrate the difference in operation between the old and the new types of keyboards. Figures were cited to show that less training time is needed for beginners to reach effective speeds with the new keyboard than with the old style of keyboard.

Other papers read at this session were: "An Experimental Study of Biological Superstitions," by Prof. Otis W. Caldwell, Teachers College, Columbia University; "Methods of Field Study in Biology," by F. L. Fitzpatrick, Teachers College, Columbia University, and "Hypothesis and Doctrine in Science Teaching," by Benjamin G. Grunberg, New York City.

The Wednesday afternoon session was devoted to a symposium on the relation between the subject matter specialist in the liberal arts colleges and work in education. The following three papers furnished the basis of discussion: "Cooperation in Educational Problems," by E. R. Hedrick, University of California, Los Angeles; "Physics Is Physics," by F. K. Richtmyer, Cornell University, and "Substitutes for Thinking in the Study of Mathematics," by W. B. Carver, Cornell University.

Each of the speakers deplored the antagonism between liberal arts colleges and schools of education. They pointed out the value and possibilities of helpful cooperation. The various papers and the discussions, however, revealed differences in educational values and points of view which were cited as the underlying causes of the antagonism.

On Wednesday evening there was a joint dinner with Section I, Psychology, at which the two retiring vice presidents spoke. Prof. Ernest Horn, University of Iowa, spoke on "The Problem of Meaning in Reading."

The final session on Thursday morning was a joint meeting with Section I. Prof. T. L. Kelley, Harvard University, discussed ably the intricacies of correlational analysis of mental test scores in an "M" dimension space using nine variables. R. L. Hoke, Morehead State Teachers College, Morehead, Minn., presented unique devices for eliminating and measuring cheating in the new type tests among college students in large classes. Edna E. Lamson, State Normal School, Jersey City, N. J., reported on "The High School Achievement of Fifty-Six Gifted Children." Prof. Courtis, using isochrons, or maturation units, showed that conventional norms based on the means of successive age or grade groups, "average out" the significant aspects of the patterns of individual growth. He suggested that the only proper basis of interpretation of an individual's score was reference to his own growth curve.

As a whole the discussions emphasized the fact that the science of education is young and in need of vigorous and searching self-appraisal at every point.

## Rotarian Group Will Hold Annual Luncheon

The School Masters' Rotary Club will have a joint luncheon with the Minneapolis Rotary Club, Wednesday noon, March 1, at the Nicollet Hotel, Minneapolis.

The organization is composed of Rotarians with the classification "Education" from every section of the United States. The attendance at these meetings is generally from 800 to 1,000. This will be the sixteenth annual luncheon of this organization. These meetings are usually addressed by a man of national prominence, and are looked forward to by Rotarians as one of the high spots of the convention.

Hon. Floyd B. Olson, governor of Minnesota, will be the principal speaker this year. Frank Ballou, superintendent of schools, Washington, D. C., is president, and S. T. Neveln, superintendent of schools, Austin, Minn., is secretary-treasurer of the group.

## News of the Month (Cont'd)

### New Education Problems Noted in New Jersey

New demands and unusual problems in education have been created by economic conditions, including an acute demand for more vocational education, according to the annual report of Charles H. Elliott, state education commissioner for New Jersey.

Unemployment has brought a marked increase in enrollment in certain groups, the report states, coupled with which has been a reduced operating budget and difficulty in collecting taxes to finance the system.

### Geographic News Bulletins Are Now Being Issued

The National Geographic Society, Washington, D. C., is again issuing the Geographic News Bulletins which appear each week for thirty weeks of the school year. A charge of twenty-five cents is made to cover mailing costs for the thirty weeks.

### President Hoover Calls Conference on Education

A general discussion of the whole subject of the crisis in education with a view to formulating policies to meet the situation which has arisen because of the increase in school attendance and a decrease in revenues was held in Washington, D. C., on January 5 and 6. The meeting, known as the Citizens' Conference on the Crisis in Education, was called by President Hoover.

President Hoover opened the conference, which was held in the lecture room of the National Academy of Sciences, with an address in which he outlined the purposes of the meeting. Dr. Ray Lyman Wilbur, secretary of the interior, presided.

The two major purposes of the conference, as expressed by the President, were: First, the necessity for making retrenchments in school expenses with the least possible injury to future generations; second, to secure effective participation and constructive action of citizens of widely different points of view.

Among the topics discussed at the conference

were the shrinkage in the national income; the increase in government expenses; the reduction in wages and in commodity prices; the increases incurred in bonded indebtedness; the increase in school attendance during unemployment and the number of boys and girls in gainful employment.

The policies adopted together with recommendations will be sent to the various state and local communities for examination.

### City and Rural Schools Are Hit by Depression, Reports Show

First reports to the U. S. Office of Education from the states as to how the economic depression has affected public education and what school authorities are doing to meet the situation, have just been released.

Replies from inquiries sent to 3,176 school superintendents in cities of 2,500 population and up, and to 4,281 county superintendents have revealed trends in forty-one cities of 100,000 population and over, eliminations and curtailments of service in 478 cities of 10,000 population and over, and trends in rural schools in two states—Alabama and Arkansas.

Significant findings of the inquiry on city schools are as follows: enrollment, up 1.39 per cent; teaching staff, down 2.13 per cent; teachers' salaries budget, down 4.96 per cent; assessed value of property yielding school funds, down 7.5 per cent; current expense, down 5.32 per cent; capital outlay, down 37.98 per cent; state aid, up 3.13 per cent.

By excluding the North Atlantic region, which has been more or less stable, sharp changes in averages appear, as follows: enrollment, up 1.63 per cent; teaching staff, down 2.59 per cent; teachers' salaries budget, down 14.62 per cent; assessed value of property yielding school funds, down 14.12 per cent; current expense, down 12.24 per cent; capital outlay, down 39.19 per cent; state aid, down 5.98 per cent.

Nearly two-thirds of 478 cities, 10,000 to 100,000 population, report that some services of the schools have been curtailed or abolished entirely. School services suffering most frequent curtailment are night schools, physical education, nurse service and medical inspection.

Fifty-two cities report increases in school services. Physical education, dental clinics and classes for handicapped children head the list of gains.



## News of the Month (Cont'd)

Two cities have added junior colleges during the depression period.

Arkansas and Alabama rural schools have been hard hit, reports show. Because of lack of funds in twenty-six cases Arkansas schools were entirely abandoned. The state reports that four out of five counties closed schools early because of insufficient funds. Two counties cut off approximately two months. In Alabama two counties closed their schools in the middle of the term.

### "Eyesight" Room Will Be Opened in Chicago School

A room especially designed to save eyesight will soon be established in one of Chicago's public schools as a gift from the Chicago Woman's Aid in honor of its fiftieth anniversary. The room, which is to accommodate about forty pupils, will be specially lighted and decorated, and special typewriters and other equipment will be supplied. Pupils' eyes will be tested and fitted with glasses by a physician.

### Review of School Plant Research Is Published

"School Buildings, Grounds, Equipment, Apparatus, and Supplies" is the title of the first review of research in this field made by the American Educational Research Association and published as number five of the second volume of the new review series. The review contains seventy-nine pages of organized citations divided into five chapters and a bibliography. The material presented brings together for the first time the isolated as well as the organized and published research projects in the field of the school plant.

The committee in charge of the work included Homer W. Anderson, superintendent of schools, Omaha, Neb.; Prof. H. P. Smith, Syracuse University; Prof. John Guy Fowlkes, University of Wisconsin, and Prof. T. C. Holy, Ohio State University, chairman. The committee was assisted by Ray L. Hamon, Peabody College, and William E. Arnold, research assistant, Ohio State University. Prof. Frank N. Freeman, University of Chicago, is chairman of the general editorial board. Copies of the publication may be secured from the National Education Association, Washington, D. C.

### Warns Against Illegal Use of Copyright Material

In the past two years there has been a startling increase in the use of literary property without the permission of the author or the copyright owner, according to the National Association of Book Publishers. Professors and teachers lift pages, in some cases even chapters, from copyright books and duplicate them for distribution to students, without realizing that this practice is unethical and illegal and a definite handicap to the future production of scholarly work.

The federal copyright laws give to the author (or publisher if he is the copyright owner) "the exclusive right to print, reprint, publish, copy and vend the copyrighted work." Copying without specific permission from the copyright proprietor is contrary to the law and the person who uses book material without authorization is liable for prosecution, the association warns.

Often teachers who duplicate material for distribution to students, are thoughtless of the rights of the matter but in so doing they are doing grave wrong to authors and publishers. Copyright control is granted authors not for the sole purpose of selfish aggrandizement, but to encourage research, authorship, and publishing initiative and investment.

### Contribute Funds for Improving Emma Marwedel's Grave

Prof. Fletcher Harper Swift, school of education, University of California, has announced the receipt of contributions from the national kindergarten sorority, Delta Phi Upsilon, and from the Southern section of the California Kindergarten Primary Association, to be used in correcting the error in the date of birth on the monument at the grave of Emma Marwedel, in the Mountain View cemetery, Oakland, Calif. A bronze tablet will also be added to the monument, giving the names of Miss Marwedel's parents, her birthplace, and certain other heretofore unknown facts presented by Professor Swift in his recently published monograph.

Miss Marwedel is best known as the founder of the first kindergarten training school on the Pacific Coast and as the teacher of Kate Douglas Wiggin, the well known novelist.

## News of the Month (Cont'd)

### Is Elected Superintendent of Schools in Omaha

Homer W. Anderson, deputy superintendent of schools, Denver, has been elected to the superintendency of the Omaha, Neb., public schools, to succeed the late J. H. Beveridge. Mr. Anderson assumed his duties in Omaha on January 1.

Mr. Anderson served as assistant superintendent in Omaha from 1917-19, going from there to Detroit where he participated in the internal continuing survey of the public schools as full-time staff director of the building program. He joined the Denver school system January 1, 1923, as assistant superintendent. In 1927 he was elected to the position of deputy superintendent. As assistant superintendent he had charge of the department of classification and statistics and was responsible for the educational planning and direction of the building program. As deputy superintendent, he has had charge of the internal administration of the Denver schools. Since 1931 he has been in direct charge of the junior and senior high schools and the Opportunity School. He is a member of the American Educational Research Association.

Mr. Anderson's position as deputy superintendent in Denver will not be filled at the present time. His work in connection with the high schools and the Opportunity School will be assumed by Charles E. Greene, formerly director of research, who now becomes assistant superintendent in charge of the administration and supervision of instruction in the junior and senior high schools and the Opportunity School. Mr. Greene's position, in turn, will be assumed by C. L. Cushman, director of curriculum, who now will become director of research and curriculum. Thus two major departments of the Denver public schools have been consolidated.

### Minnesota Uses Radio to Describe School Problems

Representatives of educational organizations in Minnesota have formed a Radio Council in Education which will have general supervision of all educational broadcasts originating at Station KSTP. The activities are centered in St. Paul and Minneapolis.

The council is an advisory board of educators and prominent citizens in child guidance groups.

This group prepares and broadcasts three times each week over Station KSTP, the periods falling at 5:30 p.m., each Tuesday, Thursday and Saturday. This time has been set so that parents, children and general listeners may hear talks on various phases of education and child guidance.

Dr. Lotus D. Coffman, president, University of Minnesota, inaugurated the series on December 13. Leading educators in the Twin Cities will be represented on subsequent broadcasts, along with visiting guest speakers.

Among those serving on the executive committee of the council are S. O. Hartwell, superintendent of schools, St. Paul; Carroll R. Reed, superintendent of schools, Minneapolis, and John A. Norton, Monroe Junior High School, St. Paul.

The time for these broadcasts has been donated by Station KSTP.

### Culver Scholarship Competition Is Set for March 18

The last four in the original series of the Emily Jane Culver Scholarships are to be awarded this spring at Culver Military Academy, Culver, Ind. Twelve of these scholarships were created by the trustees of the academy two years ago and four have been given each year since.

The scholarships are awarded the winners of statewide competitions in states selected by the donors. The states for 1933 are Iowa, Tennessee, Texas and Wisconsin. The awards cover board, room and tuition at the academy for three years, making the stipend of each holder \$4,500.

Standard tests in intelligence and achievement have been adopted and supplementary tests have been especially devised for the competition. The qualifications sought are not high scholarship alone. A high degree of social adjustment, leadership, initiative and emotional stability, and promise of responsible and useful citizenship are also expected.

Candidates must be ninth grade pupils (except in Texas where eighth grade pupils only are eligible), between the ages of thirteen and fifteen, and must be in need of financial assistance.

Preliminary examinations will be held in the four states on March 18. The ten or twelve candidates making the best records in each state will later be given final consideration.

## News of the Month (Cont'd)

### Issues Three Bulletins Covering Educational Subjects

The National Association of Public School Business Officials has just issued three bulletins, prepared by special research committees.

Bulletin No. 1, entitled "Selection, Purchase, Storage and Distribution of Supplies" is a booklet of fifty-eight pages. R. W. Hibbert, director of books, supplies and equipment, board of education, St. Louis, was the chairman of the committee.

Bulletin No. 2, "Insurance Practices and Experience of City School Districts of the United States and Canada," is a book of 230 pages. H. C. Roberts, secretary and business agent, board of education, Sioux City, Iowa, was the chairman of the committee.

Bulletin No. 3, "Public School Pupil Cost Accounting," is a booklet of about fifty pages. Frederick D. Chambers, auditor, board of education, New York City, is chairman of the committee.

John S. Mount, State House, Trenton, N. J., secretary of the association, is in charge of the distribution of the bulletins.

### Bibliography of School Survey Given in Booklet

"Bibliography of School Surveys and of References on School Surveys" is the title of a booklet which has been published by the Bureau of Research, Indiana University. The authors are Henry Lester Smith, dean, school of education, and Edgar Alvin O'Dell.

The various surveys summarized in the booklet are chronicled by states, cities, counties and higher institutions of learning. The summary of each survey gives its title, director, date, type, number of pages, cost and where it is obtainable.

The list includes 879 city surveys, 287 county surveys, 424 state surveys, 79 surveys of higher institutions of learning and 80 national surveys. The surveys are classified as to type as follows: 759 general or comprehensive surveys, 154 special surveys of various phases of finance, 101 building surveys, 16 surveys of supervision, 96 vocational surveys and other special surveys on achievement, attendance, consolidation, curriculum and libraries. The references on surveys are listed by author.

The classified index of the references lists sixty-

two articles on the methods of surveying, six articles on publicity, twenty-two articles on the results of surveys, thirty-three articles on the use of surveys, fourteen articles on the history of the survey movement, nineteen articles on self-surveys and fifty-three articles on surveys in general. Many other topics are given, such as surveying in the field of child welfare, higher education, radio and mental and achievement testing.

### Can Science Harness Heaven? Is Theme of New Embree Book

Edwin R. Embree, president of the Julius Rosenwald Fund and author of "Brown America," has recently published "Prospecting for Heaven,"<sup>1</sup> a striking contribution to the literature of the mental and social sciences. The book takes the form of a series of stimulating and searching conversations supposed to have taken place between seven men and a girl on four evenings in a hotel room.

Mr. Embree presents in these conversations, which are directed by himself, an interpretation of the universe as it now is, seen through the eyes of these various persons. The talkers discuss questions of love and happiness and the future of society in their relation to man's mastery over the physical world which has brought him a new leisure. "The most conspicuous crossroads at which man stands today," it is pointed out, "is whether he will follow the age-old habit of drudging work or will take advantage of the new leisure which machine production should make possible. Strange as it may seem it is by no means certain that man can bring himself to rest from his labors."

Can science harness Heaven? This is the book's fascinating theme and its treatment is novel and intriguing. Mr. Embree makes a strong plea for the enriching of the human life which research and medicine have succeeded in prolonging.

The persons participating in this unusual method of philosophizing are a psychiatrist, a world sanitarian, a psychologist, a psychoanalyst, a social scientist, an intelligent young woman, the author and a mythical Chinese philosopher, all of whom have endorsed the author's use of their often expressed views.

Mr. Embree sailed in December for the Dutch East Indies where he will make a study of schools in that part of the world.

<sup>1</sup>The Viking Press, New York City.



## In the Educational Field

VERNON G. SMITH was recently elected superintendent of schools, Scarsdale, N. Y. Since the death last summer of RALPH I. UNDERHILL, superintendent, MR. SMITH has been supervising principal of the Scarsdale schools.

DONALD S. LOWE has been appointed headmaster, Winnwood School, Lake Grove, N. Y. MR. LOWE has been a member of the school's faculty for the past several years.

CHARLES L. AMES, superintendent, Brown school district, Hartford, Conn., and a veteran educator, died December 13. MR. AMES was in his eighty-sixth year at the time of his death.

ARTHUR C. PERRY, district superintendent in charge of school districts No. 49 and 50, Queens Borough, New York City, retired on January 1, after forty years' association with the school system.

GEORGE A. ALLEN, JR., Topeka, Kan., state superintendent of public instruction for Kansas, was killed recently as the result of an automobile accident. MR. ALLEN, who was sixty-four years of age, was completing his sixth year as head of the Kansas educational department. W. T. MARKHAM has been named to succeed MR. ALLEN.

L. J. HANIFAN, superintendent of schools, Paducah, Ky., since 1924, died recently at his home in that city. MR. HANIFAN had been in ill health for about a year.

A. D. OWENS, superintendent of schools, Newport, Ky., was elected president, department of superintendence, Kentucky Education Association, at the association's recent convention.

W. G. SCARBERRY, superintendent of schools, Wellston, Ohio, for the past six and one-half years, resigned December 31, to accept a position with the State School for the Blind, Columbus.

L. R. KIRK, superintendent of schools, LaGrange, Ky., was recently elected president of the fifth district group, Kentucky Education Association.

MARGARET EASTERDAY has been elected superintendent of schools, Bernalillo County, New Mexico. Other new county superintendents in New Mexico, and the counties they represent, are: CLARICE HOLLIMAN, Catron; K. C. LEA, Curry; MARY B.

LUCERO, DeBaca; CALLA K. EYLAR, Dona Ana; GEORGIA ABERCROMBIE, Guadalupe; KATIE HALL, Hidalgo; METTIE JORDAN, Lea; OLA C. JONES, Lincoln; EULA MAE RICHARDSON, Luna; MATIAS ZAMORA, Mora; NELLIE SIMPERS, Otero; M. B. JUMPER, Quay; MAX SANCHEZ, Rio Arriba; ANDRES GONZALES, Sandoval; LEVA M. BARTON, San Juan; J. V. GALLEGOS, San Miguel; MANUEL LUJAN, Santa Fe; MIQUELA APODACA, Socorro; FLOYD SANTISTEVAN, Taos; CLYDE MCCULLOH, Torrance; MANUEL A. BACA, Valencia.

JOHN U. GILLETTE, Port Ewen, N. Y., district superintendent of schools in the second supervisory district of Ulster County, New York, for the past twenty-one years, died recently of heart disease.

J. LE ROY THOMPSON, assistant superintendent of schools, Newburgh, N. Y., has been elected superintendent of schools, Tarrytown, N. Y., to succeed L. V. CASE, who is retiring February 1.

CHARLES B. NOBLE was recently elected superintendent of schools, Switzerland County, Indiana.

DR. P. C. POTTS, supervising principal, Maryland School for the Blind, Baltimore, has been elected superintendent, Idaho State School for the Deaf and the Blind, Gooding, Idaho.

GEORGE S. FOSTER, superintendent of schools, Coleman, Mich., died recently following a brief illness. Mr. Foster was fifty-nine years of age.

J. E. MARTIN, superintendent of schools, Brookings, S. D., was recently elected to the presidency of the South Dakota Education Association.

DR. CHARLES W. LYON retired on December 31 as associate superintendent after serving the New York City school system for forty-five years. He began his career in 1887 as a teacher.

G. L. FENLON, superintendent of schools, Dawson, N. M., has been elected president of the New Mexico Educational Association.

LEON W. ROGERS, first assistant state superintendent of public instruction of Texas, has been appointed state superintendent to succeed C. N. SHAVER, who resigned to resume the superintendency of the Huntsville, Tex., schools.

RUSSELL R. BROWN, superintendent of schools, Trinidad, Colo., died recently after a brief illness.

Diamond Air-Puff Soot Blowers for low pressure heating boilers are the result of 30 years' experience in solving boiler cleaning problems for the world's greatest steam plants.

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DIAMOND POWER SPECIALTY CORPORATION, DETROIT, MICHIGAN

## In the Educational Field

At the time of his death MR. BROWN was serving his third year as superintendent of schools and director of the Junior College at Trinidad.

GEORGE S. FOSTER, superintendent of schools, Coleman, Mich., died recently following a brief illness. He served as superintendent of the Coleman schools from 1917 to 1920, and resumed the post again last year.

ARTHUR E. THOMPSON, deputy superintendent of schools for McLean County, was recently elected state superintendent of public instruction for North Dakota, succeeding BERTHA R. PALMER.

OMER CARMICHAEL, formerly superintendent of schools, Tampa, Fla., has succeeded the late E. C. GLASS as superintendent of schools, Lynchburg, Va.

DAVID H. STEWART, supervising principal for the past nine years of the Beaver, Pa., schools, has been elected superintendent.

---

### Sacramento Will Have Three New Schools

Contracts have been awarded in Sacramento, Calif., for the construction of a new school building, which will be known as the California Junior High School, and will cost \$299,744.80.

The California school is the second of three authorized under bonds voted by the local school district upon which contracts have been awarded. The first was the Stanford Junior High School, which will be ready for occupancy with the beginning of the winter school term. The third school is the Kit Carson Junior High School, bids on which were recently asked for.

---

### Carnegie Corporation Gives Big Sum to Educational Projects

Gifts amounting to \$5,256,000 to colleges, universities and other educational organizations were made by the Carnegie Corporation during its fiscal year ending on September 30, according to the report of Frederick P. Keppel, president. These grants were for a wide variety of specific purposes within the fields of library service, adult education, the arts, scientific and educational research.

### Pittsburgh Schools Use Weekly Radio Broadcast

Each Wednesday at 1 p.m. a half-hour's educational program is broadcast from Station KQV, Pittsburgh. The station cooperates with the public schools in offering these programs. The plan is based on the development of radio for general educational work. Each program is complete in itself and is of interest not only to the classes in the schools but also to the general public.

At the given hour pupils in all schools in Pittsburgh assemble in groups in the auditoriums of the several buildings. The plan has been developed by Ben G. Graham, superintendent of schools, and the supervision of the programs is under the direction of Doctor Earhart, director of music. The various schools contribute the talent used in these broadcasts.

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### Advisory Committee on Illiteracy Ends Work

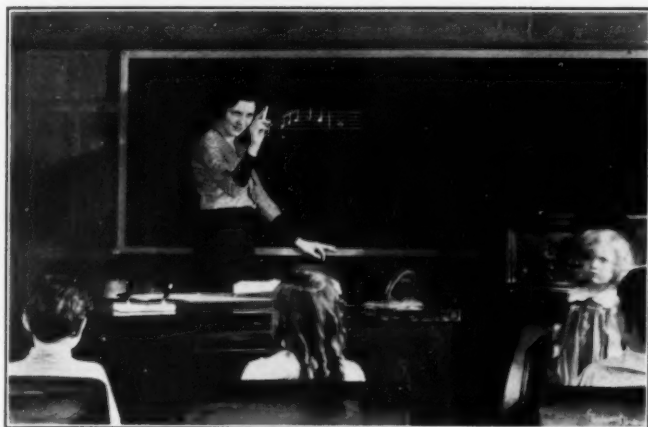
The National Advisory Committee on Illiteracy, appointed by President Hoover in 1929, draws its activities to an end with 4,283,753 persons in the United States unable to read and write, the department of the interior announced in a recent statement.

During its period of existence the committee brought about the creation of illiteracy committees in forty-four states which were instrumental in greatly reducing the number of illiterates through systematic campaigns. Illiteracy declined nearly one-third during the decade, and in Georgia 118,000 were taught to read and write.

The committee points out that the nation as a whole shows a 648,152 reduction in the actual number of illiterates, while the population has increased 17,044,426. The committee feels that this is encouraging, but calls attention to the fact that with 4,283,753 illiterates waiting to be taught, the task has just begun. It stresses the need for arousing every community to its utmost effort, every state department of education to assume its responsibility, and all state legislatures to appropriate funds for the removal of illiteracy.

The National Illiteracy Crusade, with offices in Washington, will carry forward from where the National Advisory Committee has left off.

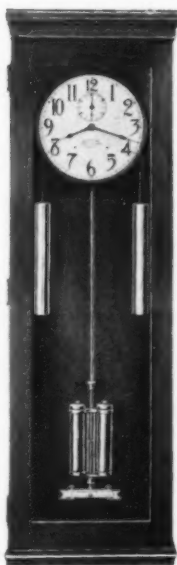




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# Your School— Its Construction and Equipment

A Department Conducted by CHESTER HART, B.Arch., Chicago

## A New Pivot Check for Lavatory Stall Doors

The constant banging of lavatory stall doors damages both the partitions and the doors. A new pivot check for single swing stall doors, made by C. H. Newton and Co., 247 Atlantic Avenue, Boston, is designed to prevent the slamming of doors against partitions or frontals. Racking and jarring are thus eliminated and longer life is given to the stall because cracking and loosening of partitions and frontals are prevented.

There are two models, one for self-closing doors where the door is closed and checked against the frontal, the other for self-opening doors where the door is opened and gently checked against the partition. Both models operate noiselessly. The checks may be installed on doors that are either flush with or below the top of the frontal.

Frontals of greater thickness than one and a quarter inches are not necessary when these pivots are used because all shock to the fittings and the frontals is eliminated. Frontal materials may be made of marble, glass, slate or a manufactured substance, and either wood or metal doors may be used. The pivot checks are self-lubricating, and nonrusting. The closing speed is controlled by an easily accessible valve.

## New Washable Wall Covering Material Is Easily Installed

A wall covering material that provides the desirable qualities of linoleum with designs and colorings especially suited for use on walls has been produced by the Armstrong Cork and Insulation Co., Lancaster, Pa.

The new Linowall is made with two types of backing material. One is a resilient linoleum composition calendered on a closely woven fabric back, and the other is a less expensive material of especially treated heavy felt in flexible sheet form on which a surface of fast color, durable lacquer has been applied to simulate the gloss and luster of ceramic tile. The fabric backed Linowall has the

pattern throughout its thickness, which gives it a longer wearing surface than the printed felt type.

Linowall is made in a wide range of colors and in marble patterns, tile effects and wood grain colorings. The surfaces are easily cleaned with a mild soap and water, and are impervious to grease, dirt and water marks.

The installation of this wall covering is a simple process, but should be done by skilled mechanics in order to obtain the best results.

The walls, whether new or old, should be made smooth, even and free from cracks. The corners should be properly rounded unless the Linowall is to be cut and a square corner fitted. A sizing coat of thinned adhesive is then applied.

The Linowall is next fitted and cut, and pasted to the wall. Linoleum paste should be used except where water frequently comes in contact with the wall covering. Waterproof cement should be used in such places.

Virtually invisible seams are made by overlapping and cutting through adjoining pieces or by



*A wainscot installation of Linowall. The cap and base are of wood, designed especially for this room.*

carefully matching and butting them, depending on the type of design.

Preformed outside corners are supplied with the felt base type of covering, and the fabric base type is shaped around the three-eighths-inch rounded plaster corner. All inside corners are made by curving the material to fit.

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After the Linowall has been applied it must be smoothed and rolled thoroughly to assure complete contact with the wall. The cap moulding, the fixtures and the base are then installed. The base may be wood, or if the floor is linoleum the new Armstrong Linoleum Cove and base may be used to form a continuous wall and floor surface that is sanitary and easily cleaned. It comes in two sections—a metal cap strip that is nailed to the wall, and a shaped piece, consisting of linoleum cemented on a metal backing which is slipped into place under the edge of the cap strip and then nailed to the floor. Ready shaped inside and outside metal corners eliminate mitering.

When Linowall is used as a wainscot either an enameled wood cap moulding or a metal cap strip may be used. The metal cap strip is nailed to the wall and the wall covering is slipped under it. A small metal edge is all that is exposed.

### Improved Metal Book Shelving Adds Beauty to Library

A new type of metal book shelving that harmonizes with many kinds of interior decoration and is a finished piece of furniture has been developed by Lyon Metal Products, Inc., Aurora, Ill. Beaded uprights are used to cover the joints between the sections, and an end finishing panel is



*A library installation of the metal book shelving, showing the end finishing panels and the uprights.*

used to give a smooth, continuous surface on the exposed ends of the section group. An ornamental cornice may also be obtained. The steel book shelving is more than a rack for the storage of books, as it adds to the attractive appearance of the library.

All parts of this shelving are interchangeable.

The shelves can be quickly adjusted on one-inch centers by raising or lowering four easily removable clips. No tools are necessary, and it is possible to readjust the shelves without removing the books. Additional shelves or sections may be added at any time.

Single face sections for use against the wall or double face sections for use in the center of the room are available. The standard finishes are green and brown. Other finishes such as gray, flat mahogany, flat walnut, two-tone fallow, cordovan, Vandyke brown and green stone may be had at an additional cost.

### A Locking Principle That Provides Increased Security

A new development in key lock design for all types of locks and padlocks has been achieved by the Dudley Lock Corporation, 26 North Franklin Street, Chicago. Greater security is claimed for this type of lock because the keys are duplicable only by the manufacturer.

The Dualock is an advanced pin tumbler principle of exclusive design, and a key made on a special machine is required for its operation. In this new lock each cylinder is made to precision limits and must pass a rigid test. The pin tumblers have sharp, square corners on the same radius as the periphery of the cylinder. In order to free these pins from the grooves they must be correctly gathered within the periphery of the cylinder. Should one pin tumbler be pulled down too far it will protrude on the opposite side and the cylinder will remain locked in the housing.

The key has a long, wavy groove and the shank is shaved to dimensions. The groove conforms to these shaved edges; at intervals it is high, pulling the pin up, then it is low, pushing the pin down. When the key has been inserted all the way, all the pins have either been pushed or pulled into place by the various heights and depths of the grooves. The keys are cut on a misaligned sequence so that it is practically impossible to figure a code. Master key convenience is added without reducing the security of the lock. This is accomplished through two separate and distinct sets of pin tumblers. There is one set of pin tumblers for change keys, and another set for master keys.

The master key type of lock is particularly desirable for school use, and one master key may be obtained for all locks in the building so that the superintendent may have complete control. The locks may also be master-keyed in various groups.

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